PTi
Public Technology, Inc.

City of Dayton, ohio

Environmental Monitoring Inventory Case Study

A new approach to working with local governments to collect, manage, and present environmental information to the public.

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EXECUTIVE SUMMARY

The City of Dayton's Environmental Monitoring Inventory Project was conducted under the direction of and with the. support of City of Dayton's Division of Environmental Management, Funding, project coordination and technical assistance was provided by Public Technology, Incorporated (PTX) and the United States Environmental Protection Agencies Office of Science Policy and Office of Research & Development. The project was undertaken using the premise that well organized and readily accessible environmental information can assist the public in better understanding the environment and learning how to help protect the environment.

Project Purpose

The City of Dayton's Environmental Monitoring Inventory Project involved conducting an inventory of available data in the Dayton region and identifying the accessibility of data to the public. The purpose of the project was to fulfill two primary objectives:

1. To serve as a case study that could assist PTI and USEPA in preparing a guidance document on how to conduct a monitoring assessment in metropolitan areas.

2. To provide the necessary information for the City to evaluate the feasibility of and to identify the potential constraints of implementing a broad-scale multimedia information program in Dayton.

Methods

The inventory program was developed to identify major environmental regulatory agencies in the Dayton region. A survey of these entities was conducted to solicit information on program goals, organization contacts, monitoring operations, data management, and availability of the data to the public. The survey results aided in the compiling of the data into a working report.

To assist in the City's evaluation of the feasibility, usefulness, demand for a multimedia environmental information program, and potential constraints of implementation, user interviews were conducted with a cross-section of potential users to understand their information needs and interests. The user interviews additionally provided an opportunity to educate and inform users about the possibilities of such program, and establish a stakeholder base for possible future action.

INTRODUCTION

The City of Dayton's Environmental Monitoring Inventory Project was conducted under the direction and support of the City of Dayton's Division of Environmental Management. Public. Technology, Inc. (PTI) and the United States Environmental Protection Agency's Office of Science Policy and Office of Research and Development (USEPA) provided funding, project coordination, and technical assistance. The responsibility of this project was taken using the premise that well organized and readily accessible environmental information can assist the public to better understand the environment and how it can help in day-today decision making by communities and public agencies.

The City of Dayton's, Division of Environmental Management provides environmental leadership to the City, recommending policies and programs, and represents the City on environmental issues. The department works to protect Dayton's ground and surface water.

PTI is a nonprofit organization focused on technology research and development for use by local governments PTI's environmental program has a strong interest in improving environmental monitoring and fostering public education and information dissemination on environmental conditions. PTI works with its member jurisdictions, the federal government, research institutions, and industry to meet these needs.

PROJECT PURPOSE

The purpose for this project was to fulfill two primary objectives. The first objective was to make environmental data accessible to the public and to inventory available environmental data This- was accomplished by providing information from the interviews that were conducted regarding environmental conditions in a local area, from the months of January 2000 to February 2000. PTI and EPA wanted to know from a local perspective (given local conditions), what environmental data is useful to have, what delivery mechanisms are best, and how the data is currently managed The larger goal was to explore how data can be used to affect positive environmental change at the municipal and neighborhood levels.

The results of the case study will be used to assist PTI and USEPA in preparing guidance in the form of a best practice's document on how to conduct a monitoring assessment in metropolitan areas. The goals of the study are to determine what are the practical obstacles to public access, what are the array of uses of monitoring information, and what is the importance of setting objectives for using the inventory information that have local relevance. These monitoring assessments typically would describe environmental monitoring technology, information management systems, and making information available to the public.

Second, the project would provide the necessary information for the City to evaluate the possibility of and to identify the potential constraints of implementing a multimedia environmental information program. The inventory would provide a starting point for the City to identify the broad array of available environmental information to design such a program, characterize the monitoring datasets, and assess the relative ease of integrating the datasets. To .

improve the evaluation of the feasibility, usefulness, and demand for such a program, a preliminary needs assessment was also performed as part of the project. The needs assessment involved conducting interviews with a cross-section of potential users to determine their interest in a feedback on a multimedia environmental information program. The users interviews additionally provided an opportunity to educate and inform users about the possibilities of such a program and establish a stakeholder base for possible future action.

METHODS

The basic components of the project were completed from December 1999 to April 2000, and included: (1) scoping and defining the project, (2) identifying and soliciting participation of monitoring entities and potential users, (3) preparing the survey and database, (4) conducting the survey and interviews, and (5) compiling information and preparing project report.

Scoping and Defining the Project

The first monitoring inventory case study conducted under the PTI/EPA cooperative agreement occurred in Las Vegas, Nevada (Clark County) in 1998. Before initiating the project in Dayton, Ohio, an understanding of the Los Angeles project was undertaken, in order to achieve continuity. Which enabled them to identify what has been learned during the course of time through each project that has been completed. Ronda Mosley-Rovi, of Public Technology, Inc. and Christopher L. Patton of Christopher L. Patton & Associates, communicated exactly what the report should include and how to go about interviewing the different Environmental Groups and Regulatory Agencies.

Given the limited funding and condensed schedule for conducting the environmental monitoring project, it was very important to focus on the inventory effort. It was equally important to identify what benefit the inventory information would provide to the City, and what they would do with it. Several different Environmental Groups and Regulatory Agencies were interviewed throughout the City of Dayton and surrounding communities to scope and define the project to best meet these needs.

This process involved interviews with ten Environmental Groups and Regulatory Agencies throughout the Metropolitan Dayton area. Internet searches were performed to determine what information on environmental conditions were readily available to the public, and which agencies or organizations were providing that information through websites.

As a result of research performed, it was decided that the media shown below are most relevant to describe environmental conditions in the Dayton area:

- Air Quality
- Surface Water
- Well Field Protection Program
- Division of Wildlife
- Other programs that provide educational information to the public.

It was recommended that the City's focus in the project would be to perform preliminary work to determine the possibility of proceeding with planning and implementation of a multimedia environmental information program. Within this framework, the primary areas of interest would be to:

- Perform a survey of major environmental monitoring groups to identify and characterize monitoring data that is collected, understand data collection, management, and interpretation requirements; determine current availability of monitoring information to the public; identify data gaps; and determine the potential for such data to be combined to facilitate identification of cumulative impacts; and

- Conduct interviews with selected number of environmental groups and regulatory agencies to (1) inform them about the educational benefits of an environmental monitoring information program and how it might assist in decision making and (2) ascertain a cross-section of the groups and agencies needs related to environmental monitoring information and delivery mechanisms.

The results of this effort to scope and define the environmental monitoring inventory project were documented in a technical memorandum to Donna Winchester, Environmental Manager, Division of Environment Management, Department of Water. Upon City approval, the project approach was reviewed with PTI and USEPA to seek their concurrence.

Identifying and Soliciting Participation of Environmental Groups, Regulatory Agencies and Potential Users

Once the relevant media had been identified, a list of monitoring entities for each media was prepared based on discussions with City staff and their familiarity with the regional monitoring. network and information from the Internet search. A screening criteria program was developed to identify which major monitoring entity would be requested to participate in the inventory survey. The criteria were:

- Entity is a major agency conducting monitoring of the identified media in the Dayton area (typically under legislative/regulatory mandate);
- Entity administers ongoing, multi-year public monitoring program;
- Entity maintains established data collection and quality assurance protocols; and
- Entity disseminates environmental monitoring information through publicly available reporting.

A complete list of monitoring entities that were requested to participate is in Appendix E.

As stated above, the City believed that the concept of an integrated environmental information program had merit, but wanted to ascertain who would used the program, for what purpose, and what information would be valuable to them. The list of potential users was compiled using information that was available through the Division of Environmental Management. Also contained in their Community and Business to Environmental Services, knowledge of City and County agencies, and the Division of Environmental Management's past project and public outreach involvement. A list of 29 potential users were identified, representing four (4) general categories:

- Established community-based organization;
- Established environmental advocacy organizations;
- City and County departments responsible for land use and planning health/safety;
- Research and academic community.

A complete list of potential users/references is in Appendix E.

Contact was made with the environmental groups and regulatory agencies by telephone to solicit participation in this project. All of them accepted and interview times were scheduled. When contacted, these environmental groups and regulatory agencies they were very eager to participate and very helpful with providing the information. Utilizing this proved to be very beneficial due to the opportunity of local networking, and the positive response that was received.

Preparing the Survey and Database

In an effort to achieve continuity, the survey used in the Los Angeles environmental monitoring inventory project was examined for relevancy to Dayton's area effort. The final report on the Los Angeles project had concluded that the survey could not coincide with the environmental. issues that occur in Dayton's area. It was decided that a more suitable survey should be developed to incorporate questions that were relevant to Dayton's environmental status.

The survey questions that were developed for Dayton's Environmental Monitoring Inventory was divided into the following six sections, which were designed to solicit the information indicated:

- **Monitoring Agency/Organization Contact Information-** to provide full identity of the monitoring entity and full contact information of individuals involved;
- **Medium Monitored-** to identify what is being monitored by the entity;
- **Monitoring Ooerations-** to identify the frequently and location of the monitoring, what monitoring or data collection devices are used, and what is the level of ongoing maintenance;
- **Data Management-** to understand how the collected data is processed and stored and to determine the level of quality assurance;
- **Availability of Data to Public-** to determine what is the current availability of information to the public and the agency concerns about disseminating monitoring information, what is the level of interpretation or assessment required before information is made available to the public, if the information is geographically mapped to describe local environmental conditions, and is the data collected and reported on a real-time basis, and
- **Supplementary Monitoring Information-** to provide information on monitoring entity goals, legal mandates requiring data collection and dissemination, duration of data collection program, source of funding, and opportunities to avoid monitoring duplication.

The interview additionally needed to meet the City's objective of determining the possibility of constraints in implementing a multimedia environmental information program. To accomplish this, the interview questions were designed to provide the following information:

- What is the geographic extent of monitoring networks? Is there adequate monitoring information to accurately describe environmental conditions in all areas of the City of Dayton?
- Is data being collected on all media to sufficiently describe local environmental conditions? Are there information gaps?
- What is the possibility of integrating multiple datasets? What are the technical and management considerations? How comparable is the accuracy and validity of information prepared by different monitoring entities? What is the level of interpretation required for the public to understand the monitoring information?

What is the likelihood of integrating multiple **datasets** to better describe cumulative impacts?

- Do monitoring entities currently disseminate information to the public on a regular basis?
- Is the data collected on a real-time basis? If not, does that impair the ability to accurately depict environmental conditions? What would be involved in implementing a real-time data collection program?

The intent was to compile profile information on monitoring entities and programs as a basis for future study. A copy of each questionnaire can be **defined** in Appendices A.

Conducting the Interviews

After speaking directly with each interview participant and discussing the project, its objectives and how this project came to existence; an interview was scheduled at a convenient time for the interviewer and the interviewee. The interviews were conducted in person. All interviews were hand written, and later documented in Microsoft Windows Office 98. Prepared questions provided structure for the interview. There were twelve (12) prepared questions broken down into the following categories: Profile/Characterization of Organization and Constituents, Information Needs, Information Access and Presentation Preferences, Information Frequency Needs, and Participation in Design and Implementation of Environmental Information Program. The questions were prepared to secure feedback on:

- What environmental monitoring information would be useful to your organization/office and your constituents?
- What might the information be used for?
- What environmental **information** do you collect and use today, how frequently, and from what sources?
- What means of information access or delivery mechanism makes most sense to you and your constituents? Do you see that changing?
- What presentation format would be most beneficial?
- Would support staff be required to help you and your constituents understand the information?
- How much detail should be available to access links or investigate relationships?
- What do you see as the advantages of real-time data?

A copy of the user interview questions are in Appendices A & D.

Compiling Information and Preparing Project Report

Upon completion of the interview survey phase of the project, the information that had been gathered was compiled and analyzed. The survey consisted of questions requesting narrative responses. All of the responses were reviewed and a single report was compiled for each entity. interviewed. These summaries consist of two to four pages each.

The project report was organized to describe the methods used in conducting the project and to present the key findings of the survey and interviews. In presenting the findings, the focus was to address the two primary objectives of the project:

- To inventory available environmental data in the Dayton region and to determine its accessibility to the community. This was done to assist PTI and USEPA in preparing guidance in the form of a best practice's document, monitoring assessment in metropolitan areas and to learn of the practical obstacles to public access-

* To provide the necessary information for the City to evaluate possibility of implementing a multimedia environmental information program.

Appendices were compiled containing summaries that may be helpful to PTI and USEPA in preparing a best management practice guidance document, which can be found in Appendices D & F.

It was decided that Montgomery County (Dayton) would serve as the most appropriate regional base map for this project. In order to show the distribution of monitoring sites in the City of Dayton Well Field Protection Area, a DGN (A standard drawing format is used by Micro-Station) and CAD software (Computer Aided Drafting) was used for mapping. A majority of the environmental groups and regulatory agencies' monitoring sites have been included with this report in map form The following maps can be found in Appendix G: Designated Well Field Protection Area, Water Quality Monitoring Locations, RAPCA's Monitoring Sites, City of Dayton Monitoring Sites, and Dayton's International Airport Monitoring Sites. Ohio Division of Wildlife has various mobile monitoring sites throughout Ohio which make them cumbersome to map. Individual maps are available to the public through the individual environmental groups and regulatory agencies. To fit the Well Field Protection Area Map and Dayton's International Airport Monitoring Site Map, they were shrunk in order for them to be put into the report

General Interview Findings

Ten user interviews were conducted. The interviewees represented a reasonable cross-section of the four categories that were originally identified. A list of interviewees and summaries of each. are in Appendix D.

As discussed previously, the reason for conducting the interviews was to improve the evaluation of the possibility, usefulness, and demand for a multimedia environmental information program, by performing a preliminary needsassessment. The interviews also provided an opportunity to educate and inform users about the possibility of a future environmental information program. The information needs for this area are varied, as the individuals interviewed have needs which include; Air Quality, Surface Water Quality, Well Field Protection, Public Education/Information and Wildlife Protection.

The interviews proved to be important to the evaluation of the possibility, usefulness, and demand for a multimedia environmental **information** program. The interviews produced a consistent recommendation to develop a program with links to existing environmental groups and regulatory agencies. The environmental groups and regulatory agencies that were interviewed thought that the development of a environmental information program would be effective in helping the public understand the connection between **environmental** conditions and human health. In conclusion:

- There was very little overlap in the collection of monitoring data from the environmental groups and regulatory agencies.
- Each entity interviewed maintained comprehensive data.
- The methods of public presentation used by the individual organizations were adequate but could be improved to increase user friendliness and public understanding.

It would be beneficial for the public to have access to a single site to attain environmental information instead of contacting each individual organization. The public could also benefit **from** knowledge of how environmental monitoring data could effect human health. The connection between environmental conditions and human health is not well established.

APPENDIX A

ENVIRONMENTAL MONITORING INVENTORY

The City of Dayton, Division of Environmental Management, in cooperation with Public Technologies, Inc. and the U.S. Environmental Protection Agency, is preparing an inventory of environmental monitoring data that is available for the Dayton region. The purpose of this inventory is to provide the information necessary to evaluate the feasibility of implementing an integrated, online environmental monitoring information program. The first step in the evaluation is to determine the current availability of monitoring data and it's accessibility to the community.

MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: _____

AGENCY CONTACT INFORMATION

First Name: _____ Last Name: _____ Title: _____

Address: _____ City: _____ State: _____ Zip Code: _____

Telephone Number: _____ Fax Number: _____

Web Address: _____

MEDIUMMONITORED

__ Air Quality   __ Wildlife

__ Ground Water   __ Well-field

__ Surface Water

MONITORING OPERATION

1. Is this agency regulated by a permit and if so who or what regulates your agency?

2. How is your agency funded?

3. Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:

4. What are your agencies/organization goals and objectives for collecting data?

5. When did data collection begin?

6. How often does water quality monitoring take place?

7. How often does water level measurements take place?

8. Where are your monitoring sites located?

9. For each location listed above list **all** data collection instrumentation used:

10. What are you monitoring for?

11. After the data is collected, how is it recorded and documented?

12. How is the data analyzed?

13. How is the data used and by whom?

14. Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?

DATA MANAGEMENT

1. What type of **software** is used for data tracking/management?

2. Who is responsible for managing the data collected?

3. What is the level of effort associated With **managing** the data?

    __ **Heavy**   - M o d e r a t e

    __ Minimal   __ None

<u>AVAILABILITY OF DATA TO PUBLIC</u>

1. Is there a legal or regulatory mandate that requires your agency or organization to make **monitoring** information available to the public?

    __ Yes

    __ No

2. After the data is processed, is the information made accessible to the public?

    __Yes

    __ No

    If not, are there plans to do so?

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

    __ Yes

    __ No

    a) If yes, are maps available to the public?

        __ Yes

        __ No

4. Do you see benefits and/or obstacles in providing information in a timely manner, to the **public?**

    __ Benefits

    __ Obstacles

    __ Both

    Please explain:

5. What would you the cost involved in making information Available to the **public in a** timely manner?

    __ Less than $5,000

    __ Between **$5,000-$15,000**

    __ Between **$15,000-$50,000**

    __ Greater than $50,000

ENVIRONMENTAL MONITORING INVENTORY

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Agency/Organization Name: _____

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MEDIUM MONITORED

__ Air Quality   __ Wildlife

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__ Surface Water

MONITORING   OPERATION

I. Is this agency regulated by a permit and if so who or what regulates your agency?

2. How is your agency funded?

3. Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:

4. What are your agencies/organization goals and objectives for collecting data?

5. When did data collection begin?

6. How often is data gathered?

7. How often does monitoring take place?

8. Where are your monitoring sites located?

9. For each location listed above list all data collection instrumentation used:

10. What are you monitoring for?

11. After the data is collected, how is it recorded and documented?

12. How is the data analyzed?

13. How is the data used and by whom?

14. Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?

DATA MANAGEMENT

1. What type of software is used for data tracking/managed?

2. Who is responsible for managing the data collected?

3. What is the level of effort associated with **managing** the data?

___ **Heavy**   ___ Moderate

___ Minimal   ___ None

AVAILABILITY OF DATA TO PUBLIC

1. Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?

    __ Yes

    __ No

2. After the data is processed, is the information made accessible to the public?

    __ **Yes**

    __ No

    If not, are there plans to do so?

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

    __ **Yes**

    __ **No**

    a) If yes, are maps available to the public?

        __ Yes,

        __ No

4. Do you see benefits and/or obstacles in providing information in a timely manner, to the public?

    __ Benefits

    __ Obstacles

    __ Both

    Please explain:

5. What would you the estimate cost involved in making information available to the public in a timely manner?

    __ Less than $5,000

    __ Between **$5,000-$** 15,000

    __ Between **$ 15,000-$50,000**

    __ Greater than $50,000

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4. What are your agencies/organization goals and objectives for collecting data?

5. When did data collection begin?

6. How often is data gathered?

7. How often does monitoring take place?

8. Where are your monitoring sites located?

9. For each location listed above list all data collection instrumentation used:

10. What are you monitoring?

11. After the data is collected, how is it recorded and documented?

12. How is the data analyzed?

13. How is the data used and by whom?

DATA MANAGEMENT

1. What type of software is used for data tracking/management?

2. Who is responsible for managing the data collected?

3. What is the level of effort associated with **managing** the **data?**

    __ **Heavy**   -Moderate

    __ Minimal   __ None

DEPARTMENT OF WATER

Jim Shoemaker, Environmental Scientist

Under the provisions of the Safe Drinking Water Act, the buried aquifer underlying the Dayton area was designated as a sole source aquifer (drinking water comes from ground water). The City of Dayton further enhanced protection of the drinking water supply by establishing a Well Field Protection Program in 1988. The Department of Water is required to meet the Safe Drinking Act, which is regulated by the OEPA. The Department is also regulated by a legal mandate that requires them to collect daily samples of ground water for drinking water at the treatment plant. There are approximately 160 monitoring wells that the department must sample on a quarterly basis, in addition to all production wells on an as needed basis. This information does not have to be provided to the EPA; they go above and beyond the call of duty.

The Department of Waters' goals and objectives is to provide the highest quality of drinking water and by doing so they sample from an Early Monitoring Network. This enables them to manage ground water contamination prior to migration to the well field areas. It further allows for the OEPA involvement.

Ground water was sporadically sampled in the beginning of the late 1970's. Routine sampling began in earnest in the mid 1980's, when the city began their early warning networks. Most water quality monitoring of wells are sampled and analyzed for VOC's on a quarterly basis.. Investigation wells are sampled at varying intervals or on an as needed basis, and water level monitoring is performed on early monitoring wells on a monthly basis. A majority of the warning monitoring wells and investigation are located with in the well field protection area.

There are three different techniques that are used to collect data at the different monitoring sites. The first technique is done with a Dedicated Sampler: with this collection instrument three volumes of water is pumped out of the well. The second technique is performed with a Submersible Pump. The pump is lowered down into the well, to the level of water that is being screened, providing the collection of a representable amount of water. Three volumes of water are pumped out. The third technique is performed by using a bailer, which is lowered, manually into the well with a long rope. The water becomes trapped in the 36-inch bailer, and pulled back up to the surface.

The Department of Water is monitoring for primary-contaminants such as: Synthetic VOC's (pesticides, herbicides,

and metals) general chemicals (nitrates, radiological (Alpha, Gamma, Beta), biological parameters ecoli, bacteria pathogens (Protozoa, Giardia, and Cryptosporidium). There are trigger levels that prompt the Water Department to take action. According to the EPA, the Department of Water has to monitor for bacteria because they are considered to be "Water Under the Influence", meaning the contaminant can go from the surface to ground water. After the data is collected it is recorded on Microsoft- Access database software, Excel Spreadsheets. Excel allows them to trend and graph the data. They also use 2 &3 dimensional software simulations by SURFER and Visual MODFLOW. The data that is collected is used for trending and graphing in order to develop conceptual and numerical modeling. The level of effort associated with managing the data is moderate. There are two divisions that are responsible for managing the data that is collected and they are primary- Water Supply & Treatment, secondary- Jim Shomaker.

The data that the Department of Water collects is regulated by a mandate, which requires their agency to make monitoring information available to the public. The data is readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis. This information is recorded on Monitoring Well' Maps and Production Well Maps.

Jim Shoemaker states that there are both benefits and obstacles in providing information in a timely manner to the public. Benefits come from the drinking water quality. Customers are informed about the quality of the drinking water, with annual average water quality summaries reported on the water bills. The obstacles come with the highly technical terms used regarding water contamination and quality that the general public wants to know about. These terms can not always be easily explained to the layman. When it comes to making information available to the public in a timely manner, the cost estimated depends on the request.

ENVIRONMENTAL MANAGEMENT PROGRAM FOR THE DAYTON INTERNATIONAL AIRPORT

Daniel Smith, Environmental Compliance Coordinator

The City of Dayton, Dayton International Airport operates under the requirements of an OEPA and NPDES permit, which regulates all storm water discharge from the airport. The primary best management practice associated with the permit is the operation of the Deicing Fluid Collection System (DFCS). The Department of Aviation is funded through the City of Dayton budget.

The DFCS has been in operation since 1996, diverting storm water containing aircraft deicing fluid (ADF) from the surface water drainage to storage lagoons, then pumped to the City of Dayton Wastewater Treatment Plant (WWTP). Approximately 25 million gallons of DFCS wastewater is discharged annually.

The DFCS at Dayton International Airport operates during the winter months to collect and discharge storm water containing ADF. The DFCS effluent is monitored continually during discharge for BOD5 loading to the WWTP.

The legal mandate requiring the collection of data is the permit from the OEPA, which requires storm water sampling and monthly reporting. Also the City of Dayton wastewater permit requires daily sampling during periods of wastewater discharge. The Department of Aviation

objectives for collecting data are to meet the requirements of the permits, which includes not to exceed the parameter limits.

Data collection related to the OEPA' permit began in 1994. The wastewater permit began the winter of 1996. For the OEPA permit, data is gathered based upon annual seasons. For example monthly sampling occurs in the summer, and during the winter there is a weekly sampling schedule. The wastewater permits requires data to be gathered daily during periods of discharge.

For the OEPA permit there are approximately 1 l-storm water outfall monitoring sites. For the wastewater permit, there is one primary wastewater discharge location.

Field instruments used for storm water sampling include dissolved oxygen meters, with the contract lab analyzing all other samples with various instruments. Wastewater discharge instruments used include a Manning Composite Sampler (used for sampling), a mag meter used for flow measurement, and totalizers are used for recording wastewater discharge.

For the OEPA Permit Program., specific storm water outfalls are monitored. There is a specific list of pollutants to be sampled for field parameters, which include

pH & flow. The remaining samples are collected by grab sampling and delivered to the laboratory for analysis. For wastewater discharge, pH & flow are measured in the field. Daily composite samples are collected and delivered to the lab for analysis, by COD (chemical oxygen demand).

After the data is collected, it is recorded and documented into a monthly report. With the OEPA Permit, they contract with Test America, to conduct the lab analysis. Lab report information generated is transferred to the OEPA 4500 reports via SwimWear Program and is transferred to OEPA electronically. Monthly total averages and flow data are calculated. When the data is analyzed for OEPA permit, SwimWear software is able to red flag permit violations. The rest of the data is recorded on Excel Spreadsheet and periodically reviewed to detect trends. When the data is entered for wastewater permit, an Excel Spreadsheet is reviewed to monitor discharge performance.

The OEPA storm water data is used by the OEPA to track surface water quality; the airport uses this data to evaluate the Storm Water Pollution Prevention Plan, Best Management Practices. Wastewater discharge data is used by the wastewater treatment plant to track influent, in order to monitor its efficiency. The airport monitors the discharge data to evaluate the effectiveness of the DFCS.

There is certain data that prompts some action by the agency. For the OEPA, there are specific pollutant concentration limits for certain storm water outfalls. For wastewater discharge there are limits for flow rates, pH, and BOD5 Load.

The OEPA permit uses the SwimWear Program (completed by the contract lab), and Excel (used by the airport to track data internally) as software for data management. The level of effort associated with managing the data is moderate, which Daniel Smith, Environmental Management for the City of Dayton is responsible for.

The legal mandate that requires the agency to make monitoring information available to the public is the "Sunshine Law". The OEPA data is available on the website, and the wastewater discharge information is available to the public upon request.

The OEPA data is linked to specific storm water drainage areas at the airport. This information is used to track and accurately describe environmental conditions within a local area on a regular basis, and maps of the area are available to the public upon request.

Representative Daniel Smith., states that he thinks that there are both benefits and obstacles in providing information in a timely manner to the public. Due to the volume of data, it may be **difficult** to provide it in a timely manner. The estimated cost involved in- making information available to the public in a timely manner is less than $5000, annually.

WATER SUPPLY & TREATMENT

**Phil Van Atta, Acting Water Treatment
Technical Supervisor**

The OEPA, USEPA, and RAPCA regulate the Division of Water Supply & Treatment (WST). These agencies regulate Water Supply and Treatment because WST is responsible for the Water Supply & Treatment Plant, Well Field, Booster Pumping Stations (for water' pressure purposes) and the Main Pumping Station. The Miami Conservancy District is responsible for regulating WST, because of the limitation on how much water they can divert into the recharge system. OEPA regulates drinking water, because they have primacy for drinking regulations. RAPCA and the Fire Department regulate Air stripping.

Water Supply and Treatment is funded by the Water-Sewer Fund, through water bill revenues.

The regulatory mandate that requires the treatment plant to collect data is the Safe Drinking Water Regulations, which was established by the USEPA and OEPA. The Water Supply and Treatment Plant's goal is to insure that the water quality remains in good condition, and to also comply with the EPA regulations.

Data collection began in the 19th century. The central quality lab monitors the quality of the water 24 hours a day, 365 days a year. Water level measurements are done quarterly, which is done by sample collectors-

The WST monitoring site is considered to be the entire Well Field, the' Treatment Plant and Water Storage & Distribution Systems- There are several different ways in which data is collected:

- LIMS- Lab Information Management System.
- IESWTR- Interim Enhanced Surface Water Treatment Rule. IESWTR is used for archiving & retrieval, for data from sand filter Effluent Continuous Turbidity Meters
- SCADA- Supervisory Control & Data Acquisition-,
- Personal computers
- Networks; personal backup drives.

Lab Instruments used:

- . GC/MA gaschromatagram/mass spectrometer- analyzes and detects VOC's.
- Atomic Absorption Spectrophotometer- analyzes metal.
- Flow Injector Analyzer- measures the moderate flow of water.
- Bar Coding System- prints, the time and date of analysis and the temperature for that day. It also prints conductivity, pH, and dissolved oxygen. After all of this data is entered into the bare coding

system, it is downloaded into the network at WST.

WST monitors for Inorganics, Organics, Physical Analysis, Microbials, Metals and Radiation. Upon the completion of the collection and documentation of the data, it is recorded and stored into personal computer drives, network drives, paper files, audiotapes and floppy disk.

After the, staff in the lab and supervisors analyze the data, it is entered into spreadsheets, and from this point they calculate statistics. After the staff checks the calculations thoroughly, they use the spreadsheets for reports to send to the regulatory agencies. Each bureau within the division submits their own reports. Other data gets electronically reported to regulatory agencies. Handwritten reports are sent to the USEPA. The staff at WST, OEPA, USEPA and NSF (National Sanitation Foundation) use the data that is collected to assure good water quality.

There are several reasons as to why the WST Plant is prompted to take action to assure quality water: if monitoring wells or production wells have reached their maximum contaminant level, the well is tested, shut off or sent to air stripping. This procedure also applies if the well contains VOC's or THM (trihalogen methanes).

Microsoft and Excel-Spreadsheets are the types of software used for data tracking. Propiarty software is used for the management of lab instruments previously' mentioned. Representative for Water Supply & Treatments, Phil VanAtta, states that there are needs for improvement on data management. LIMS System needs to be made operational, and SCADA System needs to be complete.

When the LIMS System becomes operational it enables LIMS to communicate with SCADA helping to improve the way the data is collected and compiled.

There are several different people within the staff that are responsible for collecting data: Division Manager, Lab Supervisor, Bureau Supervisors and Network overseers (who assure that the computers are running correctly). Managing data at the WST Plant is regarded to be extremely heavy.

The Information Collection Rule, Public Disclosure Laws, and the Sunshine Act, are all legal mandates that require the Plant to make information available to the public. The Water Supply & Treatment Plant requires the persons requesting the data to submit their request in writing. After the data is processed it is made accessible to the public through a consumer confidence

annual report. It is also available upon request over the telephone or by written methods. The consumer confidence rule became effective in 1999, requiring that water utilities report water quality data to their customers. The EPA regulations cover the Consumer Confidence Rule.

Collected data is cross-referenced and geographically mapped, describing environmental conditions within a local area. The maps are made available. to the public upon request There are benefits in providing information to the public in a timely manner, because if the plant provides information in a rapidly, then it is considered to be good public relations. The obstacle in providing information in timely manner, is the time involved it actually takes to make it available to the public, depending on the size of the data requested.

The estimated cost involved in making information available to the public is between $15,000 to $50,000, annually.

OHIO ENVIRONMENTAL PROTECTION AGENCY

Diana Zimmerman, Environmental Supervisor

A permit does not regulate the OEPA because they are the regulators. They are funded through federal and state money, and fees required from permit holders and a variety of grants. The legal mandate that requires the OEPA to collect data is the Clean Water Act; with the USEPA requiring the OEPA to report the water quality data (Attainment Status). The state of Ohio has Water Quality Standards for both warm and cold water habitats. A stream is assigned to one of the water quality standards. Aquatic life use designates the majority of the Great Miami River, which is a warm water habitat.

The use designations depend on the certain types of species expected to live there, and the expected chemical concentrations. OEPA's goals for collecting data are to collect the following sound, scientific, information: biology, water chemistry, sediment chemistry, physical parameters (flow) and evaluations of stream habitats.

Data collection began in the middle 1970's, but didn't become sophisticated until 1980. Water quality monitoring takes place monthly at ambient stations, with biological and' water quality studies being done every 5 to 10 years. This also depends on the resources of the agency, staffing and funding. The OEPA relies on USGS and the Miami Conservancy District, to provide them with water level monitoring information.

The ambient station locations are:

- Still water River, Lauver Rd., Pleasant Hill, (Miami County) Ohio.
- Mad River, St. Paris Pk., Springfield, (Clark County) Ohio.
- Little Miami River, US. 68, Old Town (Greene County) Ohio.
- Great Miami River, Linden Ave., Miamisburg, Ohio.
- Great Miami River, Monument Ave., Dayton, Ohio.

For the large survey, there are hundreds of sites, which. increase every year. The total maximum daily load process requires the EPA to look closely at smaller streams, which has caused them to increase the number of sites. This also causes restoration of streams, which is an excellent process, but involves more work.

There are a variety of instruments used to collect data, including sondes and other hand held units. A sonde is a multiprobe unit' that is placed in streams for a period of time, recording and measuring the following parameters: pH, D.O., and conductivity (meters).

Water and sediment samples get sent to an analytical lab. In addition OEPA has its own lab, located at Ohio State University. OEPA monitors for:

- Biological- fish species, population & health.

- Macro Invertebrate- bugs; species diversity, population, & community composition.

- Water Chemistry- D.O., pH, conductivity, heavy metals, nutrients, and conventional parameters, such as: COD, BOB (total suspended solids), pesticides, PCB's, BNA's (base neutral acids) which are extractable organic compounds, and VOC's.

Sediment chemistry is tested for some nutrients, pH, total organic carbon, heavy metals, pesticides, PCB's, BNA's, and VOC's. Habitat evaluation of the stream "QHEI" (Qualitative Habitat Evaluation Index) tells OEPA if they should be meeting the "Warm Water Habitat Standards".

After data collection is complete, the water chemistry data is imported into a huge database called STORET. STORET is used for reporting the data that has been collected. OEPA also uses LIMS database; the lab (OEPA) enters all the data into LIMS for air and water information systems. LIMS data is electronically transferred to STORDES, which is used to develop their assessments.

Several staff members analyze the data. From this point it is compiled, through the completion of the assessment report.

The data is used by the state of Ohio for the 305B report, and also to compile the 303D list. 303D is another section in the Clean Water Act, requiring the state to report on streams that are impaired. Also the data that the OEPA collects is used to initiate enforcement activity and to also monitor compliance of the permit holders. The Water Quality Standards, are rules that contain levels that are expected of chemistry and biology. If those levels are exceeded, then the agency could take some kind of action. Also if the permit holders violate their limits, the agency may take some kind of action.

The type of software that is used for data management include: Fish and Macro data goes into FINS (for fish); and MIDGES (for Macros). This data gets put into a large database called ECOS. ECOS Habitat is also put into ECOS.

A variety of staff members of OEPA are responsible for managing the data that is collected: Chemists, Biologists and Environmental Scientists in Columbus; and also the Environmental Scientists in the

district offices. The level of effort associated with managing the data is moderate, but OEPA recognizes that they must do a better job with data management. Emphasis has been placed on the permit holders, instead of managing the scientific data. This process is changing, with the adrninistrators putting more effort on managing the database.

The legal mandate that requires the OEPA to make monitoring information available to the public is the Freedom of Information Act. After the data is processed the information is made accessible to the public through their website; (there are a variety of reports on this website). If the public wants to review the raw data they can request it through the "Freedom of Information Act".

The data that is collected is readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis. Found on the website under "Explore Your Watershed", this gives attainment status of streams, but it is not posted on a regular basis. Maps to these sites are available to the public on the website, but the maps cannot be downloaded.

According to EPA's representative Ms. Zimmerman she sees both benefits and obstacles in providing information to the public in a timely manner. Benefits include getting the information to the public as soon as possible, giving them the right to know what they are and are not being exposed to. Obstacles include the need for information assessment prior to the public gaining access. This could lead to false impressions if the information has not been properly evaluated.

The estimated cost involved in making information available to the public in a timely manner is greater than $50,000, and includes:

- Preparation of the survey
- Field work
- Writing the document
- Printing
- Paying labs to do chemical analysis

*Sites are visited 4 to 6 times in the summer season, which drives the total cost of the program up.

APPENDIX C

MIAMI VALLEY REGIONAL PLANNING COMMISSION

SPECIAL REPORT

Scott Hammond, Director, Water Quality
Planning Hydro-Geologist

The Miami Valley Regional Planning Commission (MVRPC) is a voluntary driven agency. Different jurisdictions within the region enter into contracts with MVRPC and join their agency, comprising approximately 50 to 60 members that belong to MVRPC within the region.

The agency is funded through membership dues, including grant money from: USEPA & OEPA, for water, and also from special contracts with jurisdictions. Another source of funding is the Ohio State General Revenue Fund. The percentage of the funds fluctuates depending on the year.

Although MVRPC is not regulated by a permit, they are regulated by a mandate that requires them to do their job, due to the Clean Water Act. This mandate requires them to collect water quality data and the Clean Air Act requires them to get involved with transportation.

MVRPC's goals and objectives are to establish a baseline of good quality data, and to maintain the data. The data that is being collected is used to maintain the Clean Water Act.

MVRPC came into existence in 1964. They were brought together by jurisdictions in the region to make long term plans, for water, air, transportation, and development.

MVRPC does not do actual collecting and sampling of data, but they do' collect other data and come up with their own interpretations and recommendations concerning what steps the business, local officials, industries and citizens might need to take. MVRPC collects data from the businesses, local officials, industries and citizens. They do not deal with day to day collection or sampling. Rather it is collected yearly and quarterly.

Unlike most of the agencies that were interviewed, MVRPC does not have monitoring sites. They have programs for developmental plans for the city. For example, future needs for improvement of: roads, road conditions, and bikeways, traffic flow and volume.

MVRPC collects data on land use, land cover, different types of pollutant sites (land fields, lagoons, feed lots, and hazardous waste facilities) soil and aquifers-The data that is collected is recorded and documented in reports that are taken from and given to the different agencies and G.I.S. The Data that is recorded on maps for geographical presentation is analyzed by the following database: Microsoft's- Excel, Spreadsheets,. Transportation Modeling,

Flow (W.E.P.), and ARC information (mapping).

The staff members of MVRPC, **USEPA,** OEPA, the members within the jurisdiction, and anyone that is going to help in guiding future projects use the data. The data is used to help them target how to use their money.

MVRPC uses Microsoft Windows (Excel and Access) database, **ARCINFO** and **ARCVIEW** for data management. The responsible parties that are involved in managing the data collected, depends on the division that is involved. Geographical Informational **System** maintains the geographic database (mapping). The level of effort associated with managing the data is moderate, because they handle a lot of meetings and planning for long term solutions.

They have several means in which they make information available to the public. The **USEPA** has a mandate that requires this agency to make the data available to the public through a **website** that started in 1999. They make information available to the public by holding public meetings and committee meetings. Information is also made available to the public because the information is actually given to the jurisdictions and in turn, the jurisdictions give the information to the public. MVRPC does not directly relate with the public, but they do relate with public representatives. The estimated cost involved in making data available to the public is more than $50,000 annually.

Mr. Scott Hammond, Director of Water Quality **&** Planning Hydrologist of MVRPC, states that the benefit in providing information to the public in a timely manner is that the public can see what they are really doing once they get their work out. This justifies their existence. Funding is an obstacle, because they do not have the funds or the staff to put in the working hours.

DEPARTMENT OF WATER

SPECIAL REPORT

Michele Jones, Environmental Scientist

The Ground Water Festival Foundation held its **first** Children's Water Festival in Nebraska in 1989, and since that time over 200 other festivals have been held in the United States, Canada, and around the world. Susan S. Seacrest, President of the Ground Water Foundation, is the founder of the Children's Water Festival. Each festival is based on the same premise: children and adults learning about water, engaging with hands on activities. The various festivals that are held throughout the world have **incorporated** issues that are important to their individual region.

Tamrni L. Clements, Manager of Sewer Maintenance, brought the Ground Water Festival to our region in 1997. Planning for this event usually starts in July and continues to the month of the festival. Michele Jones, Environmental Scientist of the Department of Water in Dayton, Ohio now organizes the entire festival.

The year "2000", marks the 4" annual celebration of the Ground Water Festival. This activity takes many woman/man hours and money. Planning details include sending out invitations to the schools, getting responses from the schools and choosing which schools will be selected within the region. Individual schools plan their trip to the Water Festival, their lunch,

their activities and what they learn from their experience. These few items describe the tasks that Michele Jones must prepare for, with the help of other agencies and staff members.

About The Event

The festival is a one-day event that offers a series of continuous **25-minute** presentations on groundwater and/or other water related topics, various games, experiments, exhibits, and entertainment. The day is filled with fun and memorable activities. The activities designed for the festival contain factual and unbiased information to encourage the adoption of sound environmental values and **the** desire to assume positive life-long stewardship roles regarding environmental protection. All activities challenge the children's minds through the use of hands-on activities, as well as increase their ability to apply the knowledge gained at the festival to their everyday lives.

Goals

The goals for the Children's Water Festival:

- Help heighten children's awareness about water as a valued resource.

- Help children recognize water's relationship to other resources.
- Help provide sound principles, which will promote environmental awareness and environmental responsibility.
- Help heighten children's interest in science related fields.
- Help other communities to develop festivals to educate their children about natural resources.

Objectives

The objectives behind the Children's Water Festival is to assist students in learning:

- The water cycle and groundwater's role in it.
- The importance of water to all life.
- The interdependence of plants, trees, wildlife, soil and water.
- About all resources which are used to supply drinking water to communities.
- The effect of human actions on water and the environment.
- Then need for responsible action.
- The basic/fundamental concepts of a well field protection program.
- Issues related to water conservation-

The festival is funded in cooperation with Miami Valley Earth Central, raising money from city, state, local businesses and community organizations. They are a non-profit organization; having fund-raisers and also raising money from year to year.

Water Festival
Proposed Budget for 2000

Transportation(Charter Buses)	$13,000
Food/Beverages	$7,000
Memorabilia/Volunteer Tokens	$7,000
Equipment Rental Fees	$6,000
Printing/Reproduction	$5,000
Entertainment/Main Attractions	$4,000
Festival Location Fees	$3,000
Activities/Develpment/Supplies	$3,000
Teacher Resources	$3,000
Training/Promotion/Insurance	$10,100
Total	$61,100

The Festival has been successful because people in general are becoming more and more concerned about the environment, especially water. The Children's Water Festival, is a premier event for the City. of Dayton, an activity that

provides Montgomery and Greene County students with a day of hands-on environmental awareness activities. Michele Jones, states that this is an event that gets bigger and better each year, and expects it to continue in years to come.

MIAMI VALLEY RIVER INDEX

FACT SHEET

DAYTON LIME 2000

The Water Supply and Treatment Plant, incorporates a lime softening program called "Dayton Lime 2000".

Dayton lime (calcium oxide) is produced by recalcining lime-softening residuals from Dayton's Ottawa and Miami Water Treatment Plants. Lime softening residuals (approximately 4% solids in water), are pumped from the water treatment plants to the Lime Recovery Facility. The residuals consist mostly of calcium carbonate and magnesium hydroxide. Some iron precipitates out of the water in the form of ferrous hydroxide.

At the Lime Recovery Facility, carbon dioxide from the lime kiln dust scrubbers is fed through diffuser tubes into the residuals to selectively dissolve and separate magnesium. Relatively pure calcium carbonate sludge is dewatered in centrifuges and pumped into a rotary kiln. During the recalcination process, temperatures in excess of 2000 degrees F convert the calcium carbonate into calcium oxide and carbon dioxide. The carbon dioxide is used for sludge carbonation and drinking water pH stabilization (at the adjoining Ottawa Water Treatment Plant). Calcium oxide (quicklime) is the finished product of the lime kiln.

The following table summarizes 1999 lime quality test results.

Parameter	1999 Average
CaO%	92.6%
Slaking-Temperture Rise (F)	93.6 F
Insoluble Material	0.51%

MIAMI VALLEY RIVER INDEX

## Providing a Public Link to Environmental Data

AT-A-GLANCE

About U.S. EPA's EMPACT Program
- *EMPACT* ⇨ Environmental Monitoring For Public Access And Community Tracking
- *Purpose* ⇨ Provide the general public with clearly-communicated, timely, useful, and accurate environmental monitoring data in an ongoing and sustainable manner in larger U.S. metropolitan areas

Miami Valley RIVER INDEX Project
- Total Grant Award ⇨ $475,000
- Project Period ⇨ 2 years, starting January 1999
- National Program ⇨ *Miami Valley RIVER INDEX* is one of eight projects funded from 150 submissions across the United States
- Study Area ⇨ MVRPC's Lower Great Miami River Watershed Planning Area including most of the Dayton Metropolitan Area, most of Montgomery County, and portions of Greene, Miami and Preble Counties
- Focus Waterways ⇨ Great Miami, Stillwater, and Mad Rivers, and Wolf Creek
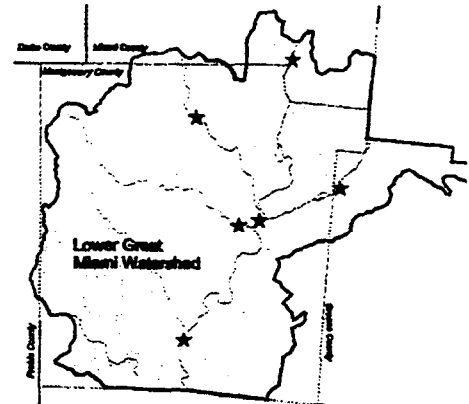
Miami Valley RIVER INDEX Partners
- The Lower Great Miami Watershed Enhancement Program (WEP) seeks to bring together major public and private stakeholders in the Lower Great Miami Basin in a unified effort to protect and improve the quality of the watershed in a manner that enhances the public and economic health of the Miami Valley Region.
- Miami Valley RIVER INDEX Partners are all participants in the WEP.
- Primary Miami Valley RIVER INDEX Partners are:
  - **Miami Valley Regional Planning Commission -** Lead Agency, responsible for overall project coordination;
  - **Miami Conservancy District -** responsible for oversight of Monitoring Component;
  - **CH2M HILL Inc. -** responsible for oversight of Information Management Component;
  - **City of Dayton -** responsible for oversight of Communication Component;
  - **Wright State University Institute of Environmental Quality -** assist with technical aspects of Monitoring Component; and
  - **YSI Incorporated -** supplier of monitoring equipment and technical support.
- Other Collaborative Partners include the **United States Geological Survey** and **Wright State University's Center for Urban and Public Affairs.'**

The Project

- **Product** ⇨ A multi-media **"RIVER INDEX"** that will provide understandable information to the general public regarding overall river water quality, flow stage, and habitat.

- **Monitoring Network** ⇨ Electronic probes will be installed in-stream at six stations along portions of the Great Miami, Mad, and Stillwater Rivers and Wolf Creek.

- **Data Collection** ⇨ Continuous sampling at each station will include specific chemical and physical parameters and flow stage.

- **Other Data** ⇨ Habitat investigations such as fish tissue sampling, toxicity testing, and biologic surveys will be periodically conducted.

OVERALL **WATER QUALITY**

- **. RIVER INDEX** ⇨ Data transmitted to a centralized computer database will be categorized and converted into a value reflective of river conditions.

- **Communication** ⇨ The **RIVER INDEX** will be disseminated periodically via Internet, television, radio, newspapers, faxes and other media outlets.
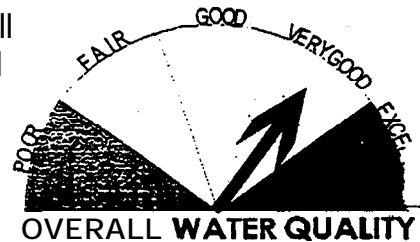
Project Components (3)

- **Monitoring** ⇨ Includes design and installation of river monitoring network.

- **Information Management** ⇨ Includes design and implementation of a computerized da management system to produce **the RIVER INDEX.**

- **Communication** *Distributes **the RIVER INDEX** to the public.

Some Project Goals

- Provide the public better and more timely access to clear and understandable informati r regarding the quality of the area's rivers.
- Enhance initiatives by other groups and agencies that seek to heighten the level of access to and awareness of the region's valuable waterways.
- Support efforts to stimulate economic growth and activity along the rivers, the success J which hinge on the condition of the rivers and the public's perception of them.
- Increase usage of the river corridors (canoeing, fishing, birding) and their amenities (par s restaurants, bikeways).
- Foster a sense of public ownership of the rivers.
- Generate additional long-term data to track river quality trends.
- Sustain the generation and the dissemination of the **RIVER INDEX** beyond the life of the grant, by incorporating it into existing programs and activities at minimal cost.

For more information contact:
Scott Hammond at MVRPC (937-223-6323) 40 West Fourth Street; Dayton, OH 45402

DAYTON

THE MIAMI CONSERVANCY DISTRICT

MVRPC
Miami Valley Regional Planning Commission

CH2MH".

YSI

WRIGHT STATE

USGS
science for a changing world

OZONE ACTION DAY

SPECIAL REPORT

AVAILABILITY OF DATA TO PUBLIC

1. Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?

    __ Yes

    __ **No**

2. After the data is processed, is the information made accessible to the public?

  __ Yes

  __ No

If not, are there plans to do so?

3. Do you see benefits and/or obstacles in providing information to the public?

    __ Benefits

    __ Obstacles

    __ Both

Please explain:

4. What would you the cost involved in making information available to the public in a timely manner?

      __ Less than $5,000

      __ Between $5,000-$15,000

      __ Between $15,000~$50,000

      __ Greater than $50,000

FISH MANAGEMENT

1. What are the long-term **statutes** that protect wildlife and give the public an opportunity to benefit from wildlife recreationally and scientifically?

2. How is the fish population and angler harvest monitored?

3. What is electrofishing, netting, and creel census and how is it conducted?

4. How is the construction and maintenance of facilities such as shoreline fishing areas and boat ramps at piers and parking areas important to anglers?

5. Where are Ohio's 5 hatcheries located?

6. How and why is research conducted on Ohio's inland lakes and streams?

WILDLIFE **MANAGEMENT**

1. What type of maintenance and improvement does wildlife undergo?

2. What efforts are being made to improve the habitat for landowners?

3. What are some of the projects that help to restore the natural populations?

4. What are some of the **laws** and regulations, that wildlife management requires?

APPENDIX B

MIAMI CONSERVANCY DISTRICT

**Dr. Mark Bamberger, Program Manager on
"Ground Water 2000" Program**

The Miami Conservancy District is not regulated by a permit. All of the monitoring is done on Miami Conservancy District's well points, and on their property and or voluntarily on other people's property. This agency is funded through assessments on the properties of the counties that they serve, which is tied to the property value. There is not a legal mandate that requires MCD to gather data but they do collect and organize the data

The Miami Conservancy District's goals for collecting data is to:

(1) Better organize the amount and quality of groundwater in the region;

(2) To compliment other organizations monitoring efforts;

(3) Establish a comprehensive baseline, so that future comparisons can be made; and

(4) Assist in answering specific concerns regarding the basin.

MCD began data collection for water levels in the early 1920's and 1930's. This network has expanded, with data collection for water levels including 70 well points that are monitored monthly. In approximately four years, MCD expects to have 120 to 130 wells.

Data collection for water quality began in the spring of 1999. There are 35 wells that are being monitored, with MCD working towards a total of 80 wells.

Water quality monitoring takes place semi-annually. Water level monitoring takes place daily from the 15 STEVEN RECORDERS, an electronic device that reads the water level. The other 55 wells are manually read monthly.

The monitoring sites are located throughout 9 counties: Shelby, Miami, Montgomery, Preble, Butler, Hamilton, Warren, Greene and Darke.

MCD, monitors the quality of the water for, **Inorganics** (metals **&** nutrients), **Organics (VOC's,** pesticides, tentatively identified compounds (TIC's), and **semi-**VOC's). The field parameters monitored include specific conductivity, **pH,** and temperature.

After the water level and water quality data is collected, it is kept in Microsoft Windows, Access database where it is checked and analyzed. The information is then uploaded to Sequel Server, which prepares the data to go on to the Internet.

The data is analyzed through trend and spatial analysis, which shows how things change with time and place with the

"GROUND WATER 2000"

Ground Water 2000, is one of the groundwater quality monitoring programs, headed by the Miami Conservancy District's, Program Manager, Dr. Mark Bamberger.

Although ground water efforts have been going on for decades at MCD, the program did not begin until 1997, with many of the ground water experts in the Miami Valley Region helping to develop the majority of the program goals. The program is an informational resource with the intent to provide objective and factual data and interpretive information to anyone in the region interested in ground water.

The mission behind "Ground Water 2000", consists of the following goals:

1. Attain public participation in the growth and development of the **program.**
2. Develop an information management system to effectively make their information accessible to the public (Internet).
3. Provide effective data analysis and interpretation-
4. Raise awareness of the importance of ground water through educational opportunities.
5. Expand and maintain monitoring networks through the basin.

Ground Water 2000, is publicly funded, and provides services within and to the following (9) counties:

- Shelby
- Miami
- Montgomery
- Preble
- Butler

- Hamilton
- Warren
- ɗ◻ m̗ m̗ ∎ m̗
- Darke

Services through the ground water program are either tied to technical data, identified environmental issues or objective interpretation.

DEPARTMENT OF WATER

**Lee Drummond, Environmental Compliance Coordinator, Well
Field Protection Program**

The City of Dayton's, Well Field Protection Program, is not regulated by a permit. However, the OEPA did develop standards concerning the elements required in a Well Head (a single well) Protection Program. This program was the **first** program officially endorsed by the OEPA. . The Well Field Protection fund comes **from** a charge on the water bills of 440,000 customers. The OEPA requires, the protection program to collect data, which includes monitoring as a part of the Well Head Protection Program. These programs include other chemical reports and data collection. It is not particularly mandated by the OEPA, but they did endorse the Well Field Protection Program, using that as one of their strategies.

There are **two** goals, for the Chemical Inventory reports from the businesses. (1) To find out what kind of chemicals the business keeps on site. In case there is an emergency the environmental agencies will know how to respond to the emergency. (2) To establish a limit on the amount of stored chemicals on each site. The long-term goal on this limit is to prevent increased storage of chemicals in the Well Field Protection areas. Zoning comes into play, at this point, because businesses are not allowed to increase their level of nonconformity.

Data collection began February 1, 1989 for chemical inventory reports, with all' Businesses within the Well Field Protection area a monitored. There are no instruments that are used for data collection, because the businesses are required to fill out the inventory report forms.

The Well Field Protection Program monitors for anything defined as a **regulated** substance that is in the W.F.P. ordinance. Regulated substances are defined in the ordinance as chemicals or mixtures of chemicals "that are health hazards. Regulated substances include:

(A) Chemicals for which there is scientific evidence that acute or chronic health effects may results from exposure including carcinogens, toxic and highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes or mucous, membranes.

(B) Mixtures of chemicals, which have been tested as a whole and have been, determined to be a health hazard.

(C) Mixture of chemicals which have not been tested as a whole but which contain

any chemicals which have been determined to be a health hazard and which comprises 1% or greater of the composition on a weight per unit weight basis, and mixtures of chemicals which include a carcinogen if the concentration of the carcinogen in the mixture is one tenth of one (0.1) percent or greater of the composition on a weight per unit weight basis.

(D) Ingredients of mixtures prepared within the Well Field Protection Overlay District in cases where such ingredients are health hazards but comprise less than one tenth of one (0.1) percent of the mixture on a weight per unit weight basis if carcinogenic, or less than one (1) percent of the mixture on a weight per unit weight basis if non-carcinogenic.

(E) Petroleum and non-solid petroleum derivatives (except non-PCB dielectric fluids in use in equipment for the transmission of electric power to homes and businesses).

After the data is collected, recorded and documented, the W.F.P.P. puts the chemical inventory report into the business's files. The data is analyzed from the inventory reports: Total Maximum Daily Inventory (TMDI), is the biggest amount of chemical that they will have on site at one time and this is equal to the limit that was established in the zoning records-

Facility Hazard Potential Rating assure that every site in the designated well' field protection area is assigned a hazard potential rating number. The range of numbers is 1-9, with 9 being the highest hazard.. Conforming uses, those with less than 160 lbs. of regulated substances associated with routine daily operations, are given the lowest rating of 1 regardless of what substances are present. Non-conforming uses require a more detailed evaluation. The businesses provide Environmental Management a report stating what chemicals. they have and the amount of chemical-

The staff involved with the W.F.P.P uses the data collected, determining compliance with the program, then calculates the amount of funding available for incentives.

The trigger level that prompts action equates to the allowed storage limit. The business is required to reduce the storage amount to the allowable limit.

Microsoft Words- Excel Spreadsheets and formally dBIV, is used for data management. Lee Drummond, Environmental Compliance Coordinator and two Environmental Scientists Michele Jones

and Jim Shoemaker, are responsible for managing the data collected. The level of effort associated with managing the data is considered to he heavy.

The legal mandate that requires Environmental Management to make monitoring information available to. the public is the "Sunshine Law". After the data has been processed and if the public wants any information regarding the data that has been collected they can call Lee **Drummond,** Environmental Compliance Coordinator. The data is readily cross-referenced and geographically **mapped** t o accurately describe environmental conditions within the Well Field Protection Area.

Lee **Drummond** states that there are benefits in providing information to the public in a timely manner, because it's beneficial for the businesses and property owner to know what they have on site. There are also obstacles, because it is difficult to calculate the Facility Hazard Potential Rating. These calculations can take anywhere from a ½ hour, to a week to calculate.

Based on an annual estimation, the cost involved in making information available to the public in a timely manner is greater than $50,000. The program has three full time positions, and a good percentage of the time is involved in keeping the data base accurate and verifying data. There are also two full-time and two part time people with the Montgomery. County Combined Health District, who collect and maintain the data, and the other outlying jurisdictions-

OHIO DIVISION OF WILDLIFE

David Graham, District Manager &
Business Operation Manager

The Division of Wildlife is not regulated by a permit but driven by Ohio Law. There are 16 to 17 divisions, belonging to the Division of Natural Resources. The Division of Wildlife is a state agency, operating on a legislated mandate, coming from 2 revised codes: 1531 and 133. These codes are laws for wildlife. The legislated mandate requires the division to collect biological data from wildlife. This enables them to keep track of the population of the species that is being hunted.

The agency is funded primarily through Hunting and Fishing License Revenue. They receive 24% resident fishing license, with 30% coming from resident hunting. The remaining funds come from federal excise tax money: firearms, ammunition, and income from instate licensing hunting. An allotment of money is based on 25% to 75% Shared Fishing Funds. On a lesser extent, 3% comes from the Wildlife Diversity Fund (money that is donated from the publics tax refunds), and 10% comes from other finds.

Fund 15, is a Wildlife Fund. Money goes into this fund comes back in the form of free licenses, passing through a grant General Revenue Fund. The fund pays for miscellaneous fees, with an annual budget is estimated at $46 Million. This covers approximately 560 employees statewide.

The Division of Wildlife's goals and objectives for collecting data is dedicated to conserving and improving the fish and wildlife resources and their habitats, and to promote their use and appreciation by the people so that these resources continue to enhance the quality of life for all Ohioans.

The "Strategic Plan" for 1995-2000 is a long range plan for 5 to 6 years, and is driven by law and biological data gathering. The purpose of this plan is to capitalize on animal and people. This is done by managing rare endangered species, wetland habitats, grasslands, and forest habitats, including everything living (animal life). Management is based more on an ecosystem.

The Ohio Division of Wildlife has been in existence for approximately 127 years, since the late 1800's, with data collection occurring since the beginning. The two concepts that drove the agency include: (1) the post iron-ore era, a time when different industries had poor land practices, such as clearing and deforestation; and (2) the restoration of fish stocks. The division used to be under the Department of Agriculture, but was incorporated with the

Department of Resources, which was formed in the 1940's.

Most of the data gathered and monitored by the division is based on the annual cycle of the animal, with the monitoring sites depending on the species. There are specific sites, and also statewide sites.

There are some sites that do not need actual instruments for that particular site. For example, deer population monitoring is based on harvest data, (the number of deer killed by hunters). Road kill information by vehicles gives the decrease and increase in species. In addition every three to five years, the Division of Wildlife gathers weight data after the game have been checked in and taken. Arial surveys are also used to monitor the sites, but it does not 'work in **woodlot** country or big timbered country.

When monitoring fisheries, different types of trap nets are used to make a count. Magnifiers are used in the lab to make an age estimate according to the fishes' scales, and rulers and weighing devices are also used to analyze the fish. Another type of trapping is done by electro-fishing. **Electro**-fishing stuns the fish, which enables the person analyzing the fish to properly conduct banding procedures.

For endangered species there are several different types of devices used to keep track of them. For the peregrin falcon and eagles, genetic information is gathered: For a small number of endangered species, leg bands and wing bands are used; these species are then surveyed by binoculars. For river otters, transmitters are surgically placed in the body cavity; this enables the analyzers to follow the animal.

After the data is collected, most of the harvest data is gathered by hand, by Division of Wildlife personnel. Data is also collected at bait and tackle stores, gun stores, gas stations and deer check stations. The information collected is then recorded and documented in Trend Indicators, which is then stored in the computer (mathematical models for population). The data is analyzed by compiling it by hand. Deer data gets reduced to number-per-county by mathematics modulation models. This tells them if the herd is increasing or decreasing.

The data is used by the staff who is responsible for the research:

(1) <u>Wetland Research Station</u>- in Lake Erie, at Crane Creek. **They** are responsible for wetland-based critters such as bald eagles, waterfowl, and shore birds.

(2) <u>Water Loo Wildlife</u>- is Forest Research Land Station, responsible for

monitoring white-tailed deer, wild **turkey, ruffed grouse, indiana** bats and the **american** burrowing beetle.

(3) _Olantangy Wildlife_ – at Grassland Prairie Research Station, they are responsible for game species, for example pheasant, rabbit; quail, peregrin falcons and barn owls.

The data also gets used from an operational standpoint, with harvest regulations adjusted according to surveys. The information gets transferred from private land to public land. For example, **95%** of Ohio's Wetlands have been destroyed. The Wetlands have had to be restored for obvious reasons, on private and public land. This enables the data collectors to handle the wildlife without actually handling them physically.

The Division of Wildlife uses Microsoft Office- Windows 95 and 98, Power Point, Excel and Explorer, which are all networked with the central **office** internally. They also use SAS, SPSS, ORACLE, **ARCVIEW, &** LOTUS.

The management of data is broken up into a few categories. Those that are responsible for the three resource stations are responsible for population management. Some projects take less effort than others and it takes several people to manage the data Overall the level of effort associated with managing data is heavy.

The Division of Wildlife is required to make monitoring information available to the public, because they are a public agency and must comply by the Public Information **Act.**

There are both benefits and obstacles in providii information to the public. Beneficial because the public can be informed and educated about the destruction of unique habitats, using the knowledge to aid in restoration. The more that people understand about wildlife, the more they-can appreciate **and** realize the quality that wildlife can add to our lives.

The obstacles can be that people do not have a general interest in wildlife. It has been a struggle trying to make it more interesting to the public. The Division of Wildlife communicates with the public about wildlife through T.V., radio, newspaper and the intemet. The estimated cost involved in making information available to the public is greater than $50,000.

REGIONAL AIR POLLUTION CONTROL AGENCY

Bruno Maier, Public Information Coordinator

RAPCA is one of 9 local agencies under a contract with OEPA to inspect major industrial services, insuring that OEPA's permit system is enforced. The Regional Air Pollution Control Agency is regulated through contracts with the USEPA & OEPA, under legislation provided by the Clean Air Act of 1990. The following is a break down of how RAPCA is funded:

- 40%- comes from fees that are levied on the admission of major industrial services.
- 25%- comes from federal grant under the Clean Air Act.
- 25%- comes from local sources, such as government agency general revenue funds (for ex: inspection funds).
- 10%- comes from state general revenue funds.

A legal mandate requires RAPCA to monitor the air and report the results to the public on a daily basis, which is later compiled into an annual report. RAPCA's goals & objectives for collecting data is to obtain quality data collected from sites that meet federal and state guidelines. Their goal for reporting the data is to make sure that it is available to the public on a real time basis and to also provide the public with background information concerning the health affects of air pollutants, so they can avoid exposure to high levels of pollution.

RAPCA began collecting data in 1967. Sampling procedures depend on each pollutant, and can vary from instantaneous to 24-hour sampling. Monitoring is done daily and weekly for most of the pollutants. There are monitoring sites located throughout 6 counties: Darke, Miami, Clark, Preble, Montgomery and Greene Counties.

The monitoring techniques vary due to different type of air pollutants, which are Pollen and Mold, Ozone, Lead, Carbon Monoxide, Sulfur Dioxide and Particulate Matter 2.5 & 10. The following outlines these techniques:

- The technique for monitoring pollen and mold uses RAPCA's Rotorod samplers, which captures smaller pollen grains, which are released by trees and grasses; as well as molds and fungi. The units of concentration used are the numbers of particles per cubic meter.

The Rotorods operate by spinning two small plastic rods, which are coated with silicon grease. Pollen and Mold particles adhere to the grease. A timer is employed to sample periodically for a total of 10% of the time during a 24-hour standard period. After the rods have been exposed to the natural pollutants,

the rods are removed and stained with a red dye solution before counting under an optical microscope.

- Ozone- also known as smog, collects in the atmosphere. The presence of photochemical oxidants is an indicator of the concentration of ozone. The technique uses ultra-violet (UV) photometry, and relies on the ozone absorption of ultra violet light.

- Lead- the metallic form rarely occurs in nature, but it is found with sulfates and carbonates. It is emitted in the atmosphere by certain industries, and is used in fuels, paints, insecticides, and lead acid batteries. The monitoring technique for the concentration of lead in the ambient are is determined by measuring the lead content of suspended particulate matter collected on glass fiber filters using the conventional high volume (24-hr periods) sampling method. The lead is extracted from the filter with an acid that is sometimes facilitated by application of ultrasonic energy. The filters are analyzed by atomic absorption spectrometry using an air- acetylene flame.

- Carbon Monoxide- total emissions of CO to the atmosphere exceed the emissions of all other pollutants

combined. It quickly converts from carbon dioxide, and is very dangerous. RAPCA monitors the carbon monoxide content of the air through 2 continuous analyzers at the following sites: 4-downtown and 10 (near northwest) in Dayton. Both sites use the "gas filter correlation" technique to determine the CO concentration. In this method, ambient air is drawn into a chamber and exposed to infrared radiation.

- Sulfur Dioxide is emitted by both man made and natural sources of combustion. RAPCA's monitoring technique involves" a mixture of ambient gases entering an analyzer, and utilizes the fluorescent light principle of detection to determine the concentration. This method exposes the SO2 molecules, which then give off a characteristic radiation pattern as they return to their normal state.

- Particulate Matter (IO), is the technical term for airborne dirt. This category includes very small solid & liquid particles, having an effective aerodynamic diameter of 10 microns. RAPCA uses high volume samplers to measure the concentration of PM 10. A high volume sampler works like a vacuum cleaner: it draws a volume of air

through a filter that captures the particles suspended in the air. The sampler is designed so that only particulates 10 microns or less in aerodynamic diameter are captured.

After the data is collected it is recorded and documented by the computer, and automatically via modem, while other data is filtered. It is then sent to OEPA, which is included in the state database, and from there the data is sent to USEPA. USEPA puts the information on their webpage.

The data is used to inform the public and also to determine the compliance status. It is also used to determine how RAPCA is doing with air quality, because the air quality standard has to be met throughout the United States.

RAPCA utilizes AIRS (Areametric Information Retrieval System) database and National database software for data management. Iii Gross (Supervisor), is responsible for monitoring analysis, and Ben Dutcher, is responsible for managing the data that is collected.

The data that RAPCA collects is regulated by a mandate outlined in the Clean Air Act of 1990, which requires them to make monitoring information available to the public. An air quality index is required to be given to the public. It is the highest reading of the day, which is then reported by the news media and RAPCA's webpage.

RAPCA's Representative Bruno Maier, states that there are both benefits and obstacles in providing information to the public in a timely manner. Beneficial, because of the weather forecast. An obstacle because by the time the public gets the information, the data could be 12 to 24 hours old. In order to gather the data and get the information out to the public in a timely manner, the estimated cost is greater than $50,000.00 annually.

Ozone Action Day is a program designed to inform and educate the public of health risk that exist during the summer months when we are experiencing high temperatures and humidity. When the Metropolitan Dayton Area, experiences high temperatures and humidity the Regional Ozone Action Program warns the public. This means that weather/heat conditions are such that high concentrations of ground-level ozone (smog) are likely. The elderly and children or adults with breathing problems are encouraged to stay indoors. Ground-level ozone can irritate the respiratory tract and eyes, and can worsen respiratory problems like asthma. Therefore the public is asked to do their part to reduce smog by taking the following actions:

- Avoid driving if possible. Carpool/vanpool or take the bus. Vehicle emissions cause almost 50% of ground-level ozone. For short tips, walk or ride a bike. Miami Valley RTA (Regional Transit Authority) will offer $.25 fares on fixed routes on Ozone Action Days. If you are Downtown Dayton, take advantage of the free rides on the Wright Flyer "Street Cars" through the end of June, July and August. If you use the bike racks on the buses, you can ride the bus for free.

- Don't refuel you vehicle, or if you must,. refuel only after 6:00 p.m. Vapors from gasoline contribute to the smog problem. Refuel after 6:00 p.m. when it is cooler and the sunlight does not mix with the gasoline vapors as easily.

- Make sure your gas cap fits tightly over. Over 18 tons of gas fumes are emitted into the air everyday. This adds to the smog problem. Call the Regional Ozone Action Program at (937) 223-6323 about our free gas cap testing and replacement program;

- Around the home, limit your use of small gasoline-powered equipment such as: chainsaws, power trimmers, and shredders. None of these have pollution control devise and therefore contribute to the pollution problem.

- Limit the use of charcoal lighter fluid when grilling out. These vapors also react with sunlight and add to the pollution problem.

- Mow your lawn after 6:00 p-m. when the sunlight is not as strong and ozone is less

likely to form. Running a gasoline-powered lawn mower for one hour creates as much pollution as driving a vehicle for eleven hours. If you must mow, use a push mower or battery-powered one if you can.

Ground-level ozone (smog) is formed when bright sunlight mixes with emissions from vehicles and Small gasoline-powered engines. These emissions collect in stagnant air masses and form smog. It is important that everyone takes action to reduce ground level especially on days when these notices are issued.

By continuing to take action, the community may avoid violating the health standard for ground-level ozone. For additional information, contact the following agencies:

- The Miami Valley Regional Planning Commission (93 7) 223-6323.
- The Regional Air Pollution Control Agency (RAPCA) (937) 225-4435.
- Check out the current ozone readings on RAPCA's Webpage- http://www.rapca.org

APPENDIX D

ENVIRONMENTAL MONITORING INVENTORY

The City of Dayton, Division of Environmental Management, in cooperation with Public Technologies, Inc. and the U.S. Environmental Protection Agency, is preparing an inventory of environmental monitoring data that is available for the Dayton region. The purpose of this inventory is to provide the information necessary to evaluate the feasibility of implementing an integrated, online environmental monitoring information program. The first step in the evaluation is to determine the current availability of monitoring data and it's accessibility to the community.

MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Regional Air Pollution Control Agency

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AGENCY CONTACT INFORMATION

First Name: **Bruno**   Last Name: Maier   Title: Public Information Coordinator

Address: 451 W. Third St.   City: Dayton State: Ohio Zip Code: 45402

Telephone Number: (937) 225-4435 Fax Number: (937) 225-3486

Web Address: http://laa.co.montgomery.oh.us&www.rapca.org

MEDIUM MONITORED

_X_ Air Quality   _ Wildlife

___ Ground Water   _ Well-field

_ Surface Water

Monitoring Operation

I. *Is this agency regulated by a permit and if so who or what regulates your agency?*

- We have a contract with the **USEPA** & OEPA. The legislation that the **USEPA** works under is the' Clean Air Act of 1990.
- The Clean Air Act came up with a mandate of clean air, which rest with OEPA.
- We are 1 of 9 local agencies that contract with OEPA that inspects major industrial services to do all the work to carry out their permit system.

2. *How is your agency funded?*

- 40% are fees that are levied on the admission of major industrial services
- 25% from federal **grant,** under the Clean Air Act
- 25% from local sources, (government agencies and general revenue funds)
- 10% **from** state general revenue funds

3. *Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:*

- There is a legal mandate that requires our agency to collect **data,** under the Clean Air Act.
- We are required to the monitor the air and report the results to the public on a daily basis and compile it into an annual **report.**

4. *What are your agencies/organizations' goals and objectives for collecting data?*

- We want to obtain quality data & collects it from sites that meet federal'& state guidelines.
- Also make sure that it is available to the public on a real time basis & provide the public with the background information, with the health affects of air pollutants so they can avoid **exposure** the high levels of pollution.

5. *When did data collection begin?*

- Data collection began in 1967

6. *How often is data gathered?*

- It depends on **the pollutant;** it can vary from instantaneous to 24 hour sampling once a week.

7. *How often does monitoring take place?*

- Monitoring takes place daily and weekly.

8. *Where are your monitoring sites located?*

- Our monitoring sites are located throughout six counties: Darke, Miami, Clark, Preble, Montgomery, & Greene.

9. *For each location listed above, list all data collection instrumentation used:*

- There are different monitors and different monitoring techniques for each **pollutant** (in report)

10. *What are you monitoring for?*

- Pollen **&** Mold
- Ozone
- Lead
- Carbon Monoxide
- Sulfur Dioxide
- Particulate Matter 10 and 2.5

11. *After the data is collected, how is it recorded and documented?*

- Computerized, some of the data is done automatically via modem
- Other data is filtered
- This information is sent to OEPA, which is included in the state database, which is then sent to the **USEPA,** data is then put on the **webpage.**

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12. *How is the data analyzed?*

- The analyzers themselves analyze the data, except for the particulate matter, which is collected by a filter.
- The new PM Standard has to be weighed on a very sensitive scale that has to be sent to Cincinnati, OH, which is the 2.5 PM.

13. *How is the data used and by whom?*

- The data is used to inform the public **&** also to determine the compliance status. The Air Quality Standard has to be met throughout the United States.
- The data is used to determine how we are doing with Air Quality, if there are violations and if there are actions needed to be taken for prevention.

14. *Are there any trigger levels or take action levels?*

- Trigger levels are pollutant specific.

Data Management

1. *What type of software is used for data tracking/management?*

   - The type of software that is used for data tracking/management is AIRS (Areametric Information Retrieval) database and National database.

2. *Who is responsible for managing the data collected?*

   - The monitoring analysis section: Jim Gross (Supervisor) and Ben Dutcher (Responsible for the database)

3. *What is the level of effort associated with managing the data?*

   - The level of effort associated with managing data is heavy.

Availability of Data to Public

I. *Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?*

   - Yes, it is apart of the Clean Air Act, of 1990.
   - An air quality index is required to be given to the public (news media & web page), the highest reading of the day is reported.
   - All of the information is compiled into an annual report

2. *After the data is processed, is the information made accessible to the public?*

   - Yes, the data is made accessible to the public after processing

3. *Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis? If yes, are maps available to the public?*

   - Yes, because we have monitoring stations. When the information is reported to the media we take the highest reading of that pollutant.
   - Yes, via web. Daily ozone maps will be available this year.

4. *Do you see benefits and/or obstacles in providing information in a timely manner, to the public?*

   - I think there are both benefits and obstacles in providing information to the public in a timely manner. Beneficial, because of the weather forecast and an obstacle, **because** the information given to the public is delayed.

5. *What would you estimate the cost in making information available to the public in a timely manner?*

   - Greater than $50,000 annually, this includes going out and gathering the data.

ENVIRONMENTAL MONITORING INVENTORY

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MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Division of Water Supply & Treatment

AGENCY CONTACT INFORMATION

First Name: Phillip   Last Name: Van Atta   Title: Acting Water Treatment Technical Supervisor

Address: 3210 Chuck Wagnor Lane City: Dayton State: Ohio Zip Code: 45414

Telephone Number: (937) 3336093   Fax Number: (937) 333-6025

Web Address: www.ci.dayton.us/daytonwater/Watermain.html

MEDIUMMONITORED

__ Air Quality   __ Wildlife

_X_ Ground Water   __ Well-field

_X_ Surface Water

MONITORING OPERATION

1. *Is this agency regulated by a permit and if so who or what regulates your agency?*

    - OEPA (Ohio Environmental Protection Agency)
    - USEPA (United States Environmental Protection Agency)
    - RAPCA (Regional Air Pollution Control Agency)
    - Fire Department

2. *How is your agencyfimded?*

    - Water-Sewer fund, through bill revenues.

3. *Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:*

    - The safe drinking water regulations established by the USEPA & OEPA.
    - Information Collection Rule.

4. *What are your agencies/organization goals and objectives for collecting data?*

    - To insure that the water quality remains in good standing.
    - Also that we comply with EPA regulations.

5. *When did data collection begin?*

    - Data collection began in the 19th century.

6. *How often does water quality monitoring take place?*

    - Water quality monitoring takes place in the Central Quality Lab, 24 hours, 365 days.

7. *How ojien does water level measurements take place?*

    - Quarterly, which is done by sample collectors

8. Where are your monitoring sites located?

- Well Field
- Treatment Plant
- Water Storage & Distribution Systems

9. For each location listed above list all data collection instrumentation used:

- SCDD- Supervisory Control & Data Acquisition
. Personal computer
- Networks- personal backup drives
- Lab Instruments: GC/MS (gaschromatagram/mass spectrometer), it does VOC's analysis & detection.
  -Atomic Absorption Spectrophotometer, metal analysis
  -Flow Injection Analyzer
  -Bar Coding System, gives conductivity, pH, D.O. prints the date, time, temperature. After the data is entered into the bar code, it is downloaded into the system.

10. What are you monitoring for?

- Inorganics
- Organics
- Metals
- Microbials (bacteria, giardia, cryptosporidium)
- . Radiation

11. After the data is collected, how is it recorded and documented?

- Data is recorded and documented into our personal computer drives, network drives, paper files cassette tapes, and floppy disk (there is a need for improvement for the way data is managed).

12. How is the data analyzed?

- The data is analyzed through handwritten and electronically submitted data, from the staff, which is then analyzed by the supervisors.

13. How is the data used and by whom?

- The staff at Water Supply & Treatment, to assure good water quality uses the data.
- The OEPA, USEPA, & NSFI (National Sanitation Foundation International) also use it.

14. Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?

- If the monitoring wells or production wells contain **VOC's,** we are prompt to take action.
- If the wells have reached their maximum contaminant level, the well is either shut off or sent to air stripping.

DATA MANAGEMENT

1. *What type of software is used for data tracking/management?*

- Microsoft-Excel Spreadsheets, is used for data tracking
- Propiarty Software- used for lab instruments
- LIMS
- SCADA (Supervisory Control & Management System)
- IESWTR (Interim Enhance&Surface Water Treatment Rule).

2. *Who is responsible for managing the data collected?*

- Division Manager
- Lab Supervisor, & other Water Supply & Treatment staff.
- Bureau Supervisors
- Network overseers, assure that the computers are running correctly

3. *What is the level of effort associated with managing the data?*

_X_ Heavy   __Moderate

__ Minimal   __ None

AVAILABILITY OF DATA TO PUBLIC

I. *Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?*

      X Yes

      ___ No

2. After the data is processed, is the information made accessible to the public?

    X Yes

    ___ No

If not, are there plans to do so?

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

      X Yes

      ___ No

    a) If yes, are maps available to the public?

        X Yes

        ___ No

4. *Do you see benefits and/or obstacles in providing information in a timely manner, to the public?*

    __ Benefits

    __ Obstacles

    _X_ Both

Please explain:
- Beneficial because, it is considered to be good public relations if we can provide information in a timely manner.
- Obstacle, because of the time involved, depending on the size of the data requested.

5. *What would you estimate the cost involved in making information available to the public in a timely manner?*

    __ Less than $5,000

    __ Between $5,000-$15,000

    _X_ *Between $1 5,000-$50,000*

    __ *Greater than $50,000*

ENVIRONMENTAL MONITORING INVENTORY

The City of Dayton, Division of Environmental Managemenf in cooperation with Public Technologies, Inc. and the U.S. Environmental Protection Agency, is preparing an inventory of environmental monitoring data that is available for the Dayton region. The purpose of this inventory is to provide the information necessary to evaluate the feasibility of implementing an integrated, online environmental monitoring information program. The first step in the evaluation is to determine the current availability of monitoring data and it's accessibility to the community.

MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Department of Water

AGENCY CONTACT INFORMATION

First Name: Jim   Last Name: Shoemaker   Title: Environmental Scientist

Address: 320 W. Monument Dr. City: Dayton State: Ohio Zip Code: 45402

Telephone Number: (937) 333-3727 Fax Number: (937) 333-6770

Alternate Number: 333-3725   Web Address: www.ci.dayton.us/daytonwater/Watermain.html

MEDIUM MONITORED

__ Air Quality   __ Wildlife

_X_ Ground Water   __ Well-field

__ Surface Water

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MONITORING OPERATION

I.   Is this agency regulated by a permit and if so who or what regulates your agency?

- We are required to meet the safe drinking water act.
- We are regulated by OEPA
- Air-stripping permit
- NPDES (National Pollutant Discharge Elimination System), this is one of the permits developed for the storm water utility. Anti-degradation, plays a **part** in the development of the permit.

2.   How is your agency funded?

- The Environmental Scientist are funded by the Water Fund

3.   Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:

- Yes, we have to collect **groundwater;** daily sampling is required for drinking water. We have 160 monitoring wells that we sample on a quarterly basis. In addition to **all** production wells on an as needed basis, this information does not have to go to the EPA, we go above **&** beyond. This daily sampling goes on at the treatment plant.

4.   What are your agencies/organization goals and objectives for collecting data?

- To provide the highest quality of drinking water **&** by doing so we sample from an early warning monitoring network. It functions as an early warning mechanism, which enables us to manage ground water contamination prior to migration into the **well-field** areas. It further allows for OEPA involvement.

5.   When did data collection begin?

- Ground water was **speratically** sampled in the beginning of the late **70's.** Routine sampling began in earnest in the mid **1980's,** when the city began their early warning networks-

6. How often is data gathered?

- Most early monitoring wells are sampled and analyzed for VOC's, on a quarterly basis.
- Investigation wells are sampled at varying intervals or on an as needed basis.

*7. How **often** does monitoring take place?*

- Water level monitoring is performed on early monitoring wells on a monthly basis

8. Where are your monitoring sites located?

- A majority of the early warning monitoring wells and investigation wells is located with in the well field protection area.

9. For each location listed above list all data collection instrumentation used:

- There are 3 ways to collect data from monitoring wells:
  (1) A dedicated sampler-3 volumes of water gets pumped out
  (2) A submersible pump- pumps out 3 volumes, by lowering the pump down to the **level** of water that is being screened so you are collecting representable water.
  (3) A bailer- with the bailer, you have to manually bail the water **from** the well

10. What are you monitoring for?

- Primary contaminates of concern are, **VOC's,** additionally semi-VOC's
- Synthetic VOC's (pesticides, herbicides), Metals, General Chemicals-Nitrates, Radiological (alpha, beta gamma), Biological parameters- ecoli, Bacteria Pathogens-protozoa, giardia, cryptosporidium.
- We have to monitor for bacteria because we are considered to be water under the influence. Because the water goes from the surface to the ground water, according to the EPA.

*11. **After** the data is collected, how is it recorded and documented?*

- Microsoft, access database software
- Excel spreadsheets, it allows us to trend and graph the data, which can not be done on access
- SURFER **&** Visual **MODFLOW,** does 2 **&** 3 dimensional software simulations.

12. How is the data analyzed?

- Jim referred me to Water Supply and Treatment.

13. How is the data used and by whom?

- It is used for trending and graphing, to develop conceptual and numerical modeling.

*14. Are there any trigger levels or take action **levels** (does certain data prompt some action by your agency)?*
- Yes, anything above detection limits'
- Depending on the contaminant

DATA **MANAGEMENT**

1. *What type of software is used for data tracking/managed?*

   - ◆□□⌂
   - Access
   . Excel
   - SURFER
   . Visual MODFLOW

2. *Who is responsible for managing the data collected?*

   - There are 2 divisions: Primary-Water Supply and Treatment

     Secondary- Jim Shoemaker

3. *What is the level of effort associated with managing the data?*

   ___ Heavy   _X_ Moderate

   ___ Minimal   ___ None

AVAILABILITY OF DATA TO PUBLIC

I. *Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?*

   _X_ Yes

   __ *No*

2. *After the data is processed, is the information made accessible to the public?*

   _X_ *Yes*

   __ No

   If not, are there plans to do so?

- A formal request is made to the director of water

3. *Is data readily cross-referenced and geographically mapped to **accurately** describe environmental conditions within a local area on a **regular** basis?*

   _X_ Yes

   __ No

   a) *If yes, are maps available to the public?*

     _X_ Yes, There are monitoring well and production well maps available.

     __ No

4. Do you see benefits and/or obstacles in providing information in a timely manner, to the public?

___ Benefits

___ Obstacles

_X_ Both

Please explain:

The benefits come with the drinking water quality; the information is easily accessible.
The obstacles come with the highly technical data, which is difficult to interpret to the lay person.
If it is a big request, (which would require man-hours) for drinking water quality, this information needs to be given out, which is done on annually on water bills.
Yearly average water quality summary is on the water bills

5. What would you the estimate cost involved in making information available to the public in a timely manner?

___ Less *than $5,000*

___ Between $5,000-$15,000

___ Between $15,000-$50,000

___ Greater than $50,000

• This answer depends on the request and also what we determine a timely manner to be.

ENVIRONMENTAL MONITORING INVENTORY

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MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Division of Wildlife

AGENCY CONTACT INFORMATION

First Name: **Dave**   **Last Name: Graham**   Title: District Manager. Business Operation Manager

Address: 1076 Kinsev Rd.   City: Xenia State: Ohio Zip Code: 45385

Telephone Number: (937) 372-9261   Fax Number: (937) 376-3011

Web Address: http://www.dnr.state.oh.us/odnr/wildlife

MEDIUM MONITORED

__ Air Quality   &Wildlife

__ Ground Water   __ Well-field

__ Surface Water

MONITORING OPERATION

I.   Is this agency regulated by a permit and if so who or what regulates your agency?

- No we are not, but we are driven by Ohio Law
- We are a division of Natural Resources, there are 16 to 17 divisions
- We are a state agency, that operates on a legislated mandate, the chapter comes from (2) revised codes 1531 & 1533, laws forwildlife.

2.   How is your agency funded?

- Primarily-Hunting & Fishing license revenue
- 24%-residents fishing license
  30%-reseidents hunting
- **3%-comes** from wildlife diversity fund. (Donated money from taxes that **allows** you to donate from your tax refund)
- 1 **0%-comes** from other fines
- Remaining federal excise tax money: **firearm**s, ammunition, and income from instate licensing hunting, an allotment of money based on 25% to 75% shared, This type of funding ≈≈♦ℼ· back to 1930, and its called Pitman-Robertson.
- Fishing funding is a excise taxing, from **Dingel,** Johnson, **and Wallupbraugh**

3.   Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:

- Yes, biological data from wildlife. In order to hunt we must know the population of the species being hunted.

4.   What are your agencies/organization goals ond objectives for collecting data?

- Mission Statement: "We are dedicated to conserving and improving the **fish** and wildlife resources and their habitats, and promoting their use and appreciation by the public so that these resources continue to enhance the quality of life for all Ohioans."
- Strategic Plan- is a long rang plan, for 5 to 6 years in advance that is driven by law and biological data gathering. The Strategic Plan is also for 1995-2000, to capitalize on animal and people.
- Management of rare species

5.   When did data collection begin?

- We have been in existence for approximately 127 years, since the late **1800's.** There has been data collection from the beginning.

6.   How often is data gathered?

- Most of the data gathered is based on the annual cycle of the animal.

7. How often does monitoring take place?

- Annually

8. Where are your monitoring sites located?

- It ranges from specific sites to state wide, depending on the species.

9. For each location listed above list all data collection instrumentation used:

- Harvest data is what the deer population monitoring is based on, the number of deer that are killed by hunters. (Every 3 to 5 years we gather weight data after they have been checked in and taken).
- Road kill information from vehicles, this information gives the increase and decrease in a species.
- Data is also gathered from the reproduction cycles of the species.
- Ariel Survey, in Woodlot Country, but it doesn't work in the big Timbered Country.
- For fisheries, different types of trap nets, they are used to make a count. Lab equipment, rulers, and weighing scale. Electrofishing is another instrument that is used for data collection; it stuns the fish, which enables the person analyzing them to get their hands on the fish.

10. What are you monitoring? No reply

II. After the data is collected how is it recorded and documented?

- Most of the Harvest data is gathered by hand, by our staff, for example: Bate & Tackle stores, gun stores, gas stations and deer check stations.
- Trend indicators, which are stored in computers for different'mathematical models for population.

12. How is the data analyzed?

- It is compiled by hand
- Deer data gets reduced to number per county (mathematic modulation models); this tells whether or not the herd is declining or increasing.

13. How is the data used and by whom?

The data is used by research people who are responsible for:
- **Wetland Research** Station- Lake Erie, Crane Creek. Responsible for wetland based critters. For example Bald Eagles, Waterfowl, and Shore Birds.
- **Forest Research Land** Station- Responsible for Water Loo Wildlife, White-tailed Deer, Wild Turkey, Ruffed Grouse, Indiana Bats and American Burrowing Beetle.
- **Olantangy Wildlife Research Station**- Grassland Prairie Research Station has, Game species, such as Pheasant, Rabbit, Quail, Paragon Falcon, and Barn Owls.

DATA MANAGEMENT

I.   What type of software is used for data tracking/management?

- Microsoft Office
- SAS
- SPSS
. ORACLE
- ARCVIEW
- LOTUS

2.   Who is responsible for managing the data collected?

- The Chief of Division of Wildlife, Micheal J. Budzik
- Wetland Research Station, Forest Research Land Station, and Olantangy Wildlife Research station.
- The staff central office, are responsible for Human Dimension data.

3.   What is the level of effort associated with managing the data?

   _X_ Heavy   __ Moderate

   __ Minimal   __ None

- Some things take less effort.than others, but it takes several people to manage the data

AVAILABILITY OF DATA TO PUBLIC

1. Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?

   X *Yes*

   __ No

2. After the data is processed, is the information made accessible to the public?

   X *Yes*

   __No

If not, are there plans to do so?

3. Do you see benefits and/or obstacles in providing information to the public?

   __ Benefits

   __ Obstacles

   X Both

Please explain:
The more people understand about wildlife, they can see the quality that the wildlife can add to our lives. Providing information to the public, educates them on the destruction of unique habitat, and by doing so the public can help preserve wildlife.
The obstacle would be that people do not have a general interest in wildlife. "How do we make it interesting to the people"? The Division of Wildlife communicates with the public through the television, radio, newspaper, and internet.

4. What would you the cost involved in making information available to the public in a

timely manner?

    __ Less than $5,000

    __ Between **$5,000-$15,000**

    __ Between **$15,000-$50,000**

    _**X**_ Greater than $50,000

FISH MANAGEMENT

1. *What are the long-term statutes that protect wildlife and give the public an opportunity to benefit from wildlife recreationally and scientifically?*

- Ohio revised code statutes, chapter 153 1 & 1533, provides protection for fish whether it is recreational use or scientific.
- Administrative Code, is a regulation with in the division, it is more specific based law in 153 1 & 1533. It is administrative code 1501, gives a limitation of the size of mesh that can be used for fishing, daily bag units, and free fish day.

2. *How is the fish population and angler harvest monitored?*

- Through individual surveys.

3. *What is electrofishing, netting, and creel census and how is it conducted?*

- Electrofishing- a boat is used, to go into the water, a charge of electricity is used to stun and capture the fish.
- Netting- trap nets are used inland, in lakes to get the population of walleye.
- Creel Census- is used for surveying: Angler Harvest, specific stream and Steal water river. The 'creel census is also used keeps numbers on fishing.

4. *How is the construction and maintenance of facilities such as shoreline fishing areas and boat ramps at piers and parking areas important to anglers?*

- If they are not maintained, the public will not be able to use them, they must be kept accessible to the public; we also must make it handicap accessible.

5. *Where are Ohio's 5 hatcheries located?*

- London, Madison County
- Hebron, Licking County
- Cenicaville, Guernsey County
- Kincade, Pike County
- St. Marys, Auglaize County

6. *How and why is research conducted on Ohio's inland lakes and streams?*

There are 2 stations on one lake:
- Sandusky Fishery search station, is the western end of the lake (the shallow side).
- Fairport Fishery search station, is the eastern end of the lake (the deep side).
These stations manage the fish population in the lake.

WILDLIFE MANAGEMENT

1. *What type of maintenance and improvement does wildlife undergo?*

   There are 2 types of maintenance:
   - Buildings- provides space (office facilities) for staff and allow access to residents.
   - Roads- are maintained at safe operational leveis
   - The division of wildlife is responsible for 120,000 acres of land. Also the Boardwalks at wetlands, the board walks provided protection so the wet lands will not be destroyed.

2. *What efforts are being made to improve the habitat for landowners?*

   - Technical advise from private land biologist, on what can be done.

3. *What are some of the projects that help to restore the natural populations?*

   - Educating the public, the Beavercreek Wetland shows wildlife quality and water quality control.
   - Restore open grass-lands, Conservation Reserve Program takes highly erodable land and put it under cover, the program pays a federal land owner not to farm on its own land. This would be beneficial to wildlife.
   - Harvest management
   - Re-introduction of endangered species to an area.

4. *What are some of the laws and regulations, that wildlife management requires?*

   - Terrestrial , wildlife management is under code 1533
   - Protection of non-game birds, no person shall catch, pursue, can have a bird dead or alive in their possession, and can not be hunted or domesticated.
   - From code 153 1, gives us the right to be a willing purchaser for management of wildlife.

ENVIRONMENTAL MONITORING INVENTORY

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MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: OEPA

AGENCY CONTACT INFORMATION

First Name: Diana   Last Name: Zimmerman   Title: Environmental Supervisor

Address: 401 E. Fifth City: Dayton State: Ohio Zip Code: 45402

Telephone Number: (937) 285-6440   Fax Number: (937) 285-6249

Web Address: http://www.epa.state.oh.us

MEDIUM MONITORED

__ Air Quality   __ Wildlife

__ Ground Water   __ Well-field

_X_ Surface Water

I. Is this agency regulated by a permit and if so who or what regulates your agency?

- ⬚⬚⬚ ⬚⬚ ⬚⬚ are ⬚⬚⬚ ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

2. How is your agency funded?

- Federal money
- ⬚⬚⬚⬚ ⬚⬚⬚⬚⬚
- Fees that are required from the permit holders & a variety of grants

3. Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:

- Clean Water Act, requires monitoring
- USEPA, requires us to report water quality data (Attainment Status)
- The state of Ohio requires us to keep up with water quality standards

4. What are your agencies/organization goals and objectives for collecting data?

- Mission: " We collect sound, scientific, data & we have very rigorous quality control protocols (Biology, water chemistry, sediment chemistry, physical parameter (flow), and evaluate stream habitat).

5. When did data collection begin?

- In the middle 1970's
  - Data collection, became sophisticated in 1980

6. How often does water quality monitoring take place?

- Ambient stations are done monthly
- Biological and Water Quality Study of the Little Miami River and Selected Tributaries, done every 5 to 10 years
- Monitoring depends on the resources, staff, and funding that the agency has.

7. How often does water level monitoring take place?

- We rely on USGS & the Conservancy District to provide us with water level monitoring information.

8. Where are your monitoring sites located?

- Stillwater River, Lauver Rd. -Pleasant Hill, Miami County (OH)
- Mad River, St. Paris Pk. -Springfield, Clark County
- Little Miami River, US 68 – Old Town, Greene County
- Great Miami River, Monument-Montgomery County (Dayton)
- Great Miami River, Linden Ave.-Montgomery County (Miamisburg)
- For the big survey's there are hundreds of sits, which increase every year
- Total maximum daily load process requires us to look closely ☞ smaller streams, which caused us to increase our sites. This also causes restoration of streams (this is an excellent process, but there is a lot of work involved).

9. *For each location listed above list all data collection instrumentation used*

- Sonds- multiprobe unit, that measures pH, conductivity, & D.O.
- Hand held units- that measures pH, conductivity, & D.O.
- Water and sediment samples get sent to an analytical lab.

10. *What me you monitoring* **for?**

- Biological- fish species, population and health
- Macroinvertebrate- bugs, species divers, population, community composition
- Water chemistry- D-O., pH, conductivity, heavy metals, nutrients, conventional parameters, pesticides, PCB's, BNA's
- Sediment chemistry- (same as water chemistry)
- Habitat evaluation of the stream, Qualitative Habitat Evaluation Index

11. *After the data is collected, how is it recorded and documented?*

- Water chemistry data goes into a data base called STORET (used for reporting to data to USEPA)
- OEPA uses LIMS (lab information systems),
- The LIMS data is electronically transferred to STORDES, we use this database to develop our assessments.
- Fish and Macro data goes into FINS & MIDEGES, this data is then put into a huge database called ECOS

12. *How is the data analyzed?*

- Several staff members look at the data, depending on the staffs expertise and it is compiled into an assessment report.

13. *How is the data used and by whom?*

- The data is used by the state of Ohio, for the 305B report and also to compile the 303D (another section of the clean water act) list.
- It is used to initiate enforcement activity
- It is also used to monitor compliance of the permit holders

14. *Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?*

- If the contained levels of expected chemical and biological pollutants exceed its limitation
- If permit holders, (industries and sewer treatment plants) violate their limits

DATA MANAGEMENT

1. *What type of software is used for data tracking/management?*

   . STORET
   - LIMS
   - STORDES
   - FINS
   - MIDGES
   - ECOS

2. *Who is responsible for managing the data collected?*

   A variety of staff members:
   - Chemistry lab
   - Biologist in Columbus, OH.
   - Environmental Scientist, in Columbus and also in the district office

3. *What is the level of effort associated with managing the data?*

   __ Heavy   _X_ Moderate

   __ Minimal   __ None

AVAILABILITY OF DATA TO PUBLIC

1. *Is there a legal or regulatory mandate that requires your* agency *or organization to make monitoring information available to the public?*

    _X_ Yes

    ___ No

2. After the data is processed, is the information made accessible to the public?

    X_ Yes

    ___ No

    If not. are there plans to do so?

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

    _X_ Yes

    ___ No

    a) If yes, are maps available to the public?

        _X_ Yes

        ___ No

4. *Do you see benefits and/or obstacles in providing information in a timely manner to the public?*

   __ Benefits

   __ Obstacles

   _X_ Both

Please explain:
- Beneficial because the information should get to the public as soon as possible, the public has a right to know what they are and are not being exposed to.
- Obstacle, because the information should be assessed before it gets to the public. Information that has gotten to the public before it has been assessed leads to false impressions.

5. *What would you the cost involved in making information available to the public in a timely manner?*

   __ Less than $5,000

   __ Between $5,000-$15,000

   __ Between $15,000-$50,000

   _X_ Greater than $50,000

"GROUNDWATER 2000"

1. ***What is the mission behind Groundwater 2000?***

- The program is an informational resource; its intent is to provide objective **&** factual data **&** interpretive information to anyone interested in groundwater in this region.

2. ***When did Groundwater 2000 begin?***

- The program began January 1997.
- Groundwater efforts have been going on for a couple of decades

3. ***What are the goals and objectives for the program?***

- Get public participation in the growth **&** development of the **program.**
- Develop an informational system to effectively make our information accessible to the public.
- Provide objective data analysis **&** interpretation.
- Raise awareness of the importance of groundwater, through educational opportunities.
- To expand **&** maintain monitoriug networks through the basin.

ENVIRONMENTAL MONITORING INVENTORY

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MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Department of Water

AGENCY CONTACT INFORMATION

First Name: **Lee**   Last Name: Drummond   Title: Environmental Compliance Coordinator

Address: 320 W. Monument City: Dayton State: Ohio Zip Code: 45402

Telephone Number: (937) 333-3782   Fax Number: (937) 333-6770

Web **Address:** www.ci.dayton.us/daytonwater/Watermain.html

MEDIUM MONITORED

__ Air Quality   __ Wildlife

__ Ground Water   _X_ Well-field

__ Surface Water

MONITORING OPERATION

I. *Is this agency regulated by a permit and if so who or what regulates your agency?*

- No, we are not regulated by a permit, however the OEPA did develop standards of what elements are required in the Well Head Protection Program (Well Field Protection Program).

2. *How is your agency funded?*

- The Well Field Protection fund comes from a charge on the water bills of all of the 440,000 customers

3. *Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:*

- Yes, the OEPA includes monitoring as apart of the Well Head Protection Program
- The program includes other chemical reports & data collection (this is not mandated by the OEPA)

4. *What are your agencies/organization goals and objectives for collecting data?*

- To find out what type of chemicals the businesses are keeping on sight, through the chemical inventory reports- The inventory report enables us to know what chemicals are on sight and how to respond in case of an emergency.
- To establish a limit on the amount of storage of chemicals on each site

5. *When did data collection begin?*

- Chemical Inventory Reports began February 1989.

6. *How often does water quality monitoring take place? N/A*

7. *How often does water level monitoring take place? N/A*

8. *Where are your monitoring sites located?*

- Any business site in the Well Field Protection Area

9. For each location listed above list all data collection instrumentation used:

- No instruments are used; the businesses just have to fill out the inventory report forms.

10. What are you monitoring for?

- Anything defined as a regulated substance in the Well Field Protection Ordinance.
- Regulated substances are defined in the ordinance as chemicals or mixtures of chemicals that are health hazards.

11. After the data is collected, how is it recorded and documented?

- We put the Chemical Inventory Report in the file & that is the extent of that.

12. How is the data analyzed?

There are 2 values obtained from the Inventory Report:
- Total maximum daily inventory, which is the biggest amount of chemical that the business will have on site at one time. This equals the total limit that was established in the zoning records
- Facility Hazard Potential Rating, the business gives us the report stating the amount of their different chemicals on site.

13. How is the data used and by whom?

- We us the data to insure compliance with the program & to determine the amount of available for incentives.
- Property owners & business owners are using the information.

14. Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?

- Yes, any business that we find storing more than their allowed limit, we make them go back to their regular limits.

DATA MANAGEMENT

1. *What type of sofiware is used for data tracking/management?*

   - Microsoft-Excel, Spreadsheet
   - Formally **dBIV**

2. *Who is responsible for managing the data collected?*

   - Lee **Drummond,** Environmental Compliance Coordinator
   - **Michele** Jones, Environmental Scientist
   - Jim Shoemaker, Environmental Scientist

3. *What is the level of effort associated with managing the data?*

   __ **Heavy**   _X_ Moderate

   __ Minimal   __ None

AVAJLABILITY OF DATA TO PUBLIC

1. *Is there a legal or **regulatory** mandate that requires your agency or organization to make monitoring information available to the public?*

    _X_ *Yes*

    _ *No*

2. After the data is processed, is the information made accessible to the public?

    X_Yes

    __No

    *If not, are **there plans** to do so?*

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

    _X_ **Yes**

    _ No

    a) If yes, are maps available to the public?

    _X_ Yes

    __No

4. *Do you see benefits and/or obstacles in providing information in a timely manner, to the public?*

    __ Benefits

    __ Obstacles

    _X_ Both

Please explain:
- Beneficial because its great for the businesses & property owners to know what they have on their site
- Obstacle, because the difficulty in calculating the Facility Hazard Potential Rating's, is that it can take anywhere from ½ hour to a week.

5. *What would you the cost involved in making information available to the public in a timely manner?*

    __ *Less than $5,000*

    __ Between $5,000-$15,000

    __ Between $15,000-$50,000

    _X_ Greater than $50,000 (annually)

ENVIRONMENTALMONITORINGINVENTORY

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MONITORING AGENCY/ORGANIZATION CONTACT INFORMATION

Agency/Organization Name: Miami **Conservancy** District

AGENCY CONTACT INFORMATION

First Name: Mark   Last Name: **Bamberger**   Title: Program Manager on "Ground Water 2000 " Program

Address: 38 E. Monument City: **Dayton** State: Ohio Zip Code: 45402

Telephone Number: (937) 223-1271   **Fax Number: (937)** 223-4730

E-mail Address: mbamberger@conservancy.com

MEDIUM MONITORED

__ Air Quality   __ Wildlife

_X_ Ground Water   __ Well-field

__ Surface Water

MONITORING OPERATION

1. *Is this agency regulated by a permit and if so who or what regulates your agency?*

   - No, we are a non-regulated agency. All of the monitoring is Miami Conservancy District's well points are on our property or voluntarily on other peoples property.

2. *How is your agency funded?*

   - Assessments on the properties we serve, is tied to the property value.

3. *Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:*

   - No, the data is gathered & organized by the staff of the Conservancy

4. *What are your agencies/organization goals and objectives for collecting data?*

   - Better characterize the amount & quality of ground water in this region
   - To compliment other organizations monitoring efforts
   - Establish a comprehensive base line against which future comparisons can be made
   - To help answer specific concerns around the basin

5. *When did data collection begin?*

   - Data collection on water levels began as early as the 1920's to 1930's
   - Data collection on water quality began in the spring of 1999

6. *How often does water quality monitoring take place?*

   - Semi-annually (every 6 months)

7. *How often does water level monitoring take place?*

   - We have 15 Steven Recorders, which record data daily
   - The other wells are manually read monthly

8. Where are your monitoring sites located?

- Shelby County
- Miami County
- Montgomery County
- Preble County
- Butler County
- Hamilton County
- Warren County
- Green County
- Clark County

*9. For each location listed above list **all data** collection instrumentation used:*

- Steven Recorders
- Manually

IO: What are you monitoring for?

- Water Quality- **inorganics** (metals, nutrients)
    Organics (VOC's, Pesticides, **TIC's-** Tentativily Identified Compounds)

- Field Parameters- specific conductivity, **pH,** temperature

*11. **After** the data is collected, how is it recorded and documented?*

- The data is recorded in Microsoft- Access database, and up loaded to Sequel Server

*12. How is the **data** analyzed?*

- For water quality data, it is analyzed by trends and spatial analysis

13. How is the data used and by whom?

- The data is available to everyone interested, through the Internet site, or public inquiry.
- Some of the common groups are elected officials, academic people, homeowners, consultants **&** students.

14. Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?

- No, because we are not a regulatory program

DATAMANAGEMENT

1. *What type of software is used for data tracking/management?*

   - Microsoft- Access & Excel
   - Sequel Server

2. *Who is responsible for managing the data collected?*

   - **Katea** Hammond, is responsible for all of the field work as well as data management

3. *What is the level of effort associated with managing the data?*

   __. Heavy   __X__ Moderate

   __ Minimal   __ N o n e

AVAILABILITY OF DATA TO PUBLIC

1. *Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?*

   __ X __ Yes

   __ *No*

2. After the data is processed, is the information made accessible to the public?

   X_ Yes

   __ No

   If not, are there plans to do so?

3. Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?

   _ X _ Yes

   __ No

   a) If yes, are maps available to the public?

      _ X _ Yes

      __ No

4. *Do* **you** *see benefits and/or obstacles in providing information in a timely manner, to the public?*

      __ Benefits

      __ Obstacles

      X Both

      Please explain:
- Beneficial **because** it is one of our central missions to provide easy accesses to our data a well as other agencies data.
- Obstacle, because finding the resources **&** making data available in a timely manner is a challenge.

5. *What would* **you** *estimate the cost involved in making information available to the public in a timely manner?*

      __ *Less than $5,000*

      __ Between $5,000-$ 15,000

      X Between $15,000-$50,000 (annually)

      __ Greater than $50,000

6

MONITORING OPERATION

1. *Is this agency regulated by a permit and if so who or what regulates your agency?*

   - OEPA- NPDES (National Pollutant Discharge Elimination System), storm water permit
   - The City of Dayton, industrial wastewater permit

2. *How is your agency funded?*

   - The City of Dayton funds, the Department of Aviation

3. *Is there a legal or regulatory mandate that requires your agency or organization to collect data? Please explain:*

   - The OEPA permit requires water sampling, along with monthly reporting
   - The City of Dayton industrial wastewater permit requires daily discharge sampling and monthly reporting

4. *What are your agencies/organization goals and objectives for collecting data?*

   - Our objective is to meet the requirements of the permits, including meeting all permit parameter limits.

5. *When did data collection begin?*

   - OEPA, began in 1994
   - Waste water permit began in the winter of 1996

6. *How often is data gathered?*

   - OEPA permit is based upon annual seasons (for example monthly sampling occurs in the summer, and during the winter there is a weekly sampling schedule).
   - Wastewater data is generated during periods of discharge.

7. *How often does monitoring take place?*

   - Refer to question # 6

8. *Where are your monitoring sites located?*

- OEPA permit, the sites are laid throughout the airport There are approximately 11 -storm water outfall monitoring locations.
- Wastewater permit, there is one primary wastewater discharge location

9. *For each location listed above list all data collection instrumentation used:*

- Field instruments used are field & dissolved oxygen meters and the contract lab analyzes all other samples. The labs use various instruments
- Wastewater discharge instruments used: Manning Composite Sampler-used for sampling. Mag Meter-used for flow measurement and Totalizers are used for recording.

10. *What are you monitoring for?*

- OEPA Permit-for all storm water outfalls there is a specific list of pollutants to be sampled for, field parameters include pH & flow. The other parameters are collected by grab sampling and delivered to the laboratory for analysis.
- Wastewater Discharge- for wastewater discharge, pH & the flow is measured in the field. Daily composite samples are collected and delivered to the laboratory for analysis by COD (chemical oxygen demand), then converted to BOD5 (biological oxygen demand).

11. *After the data is collected, how is it recorded and documented?*

- OEPA Permit, lab analysis is conducted, final information is generated and transferred to the OEPA
- Wastewater reports are generated on an Excel spreadsheet. Monthly totals, averages, and flow data is calculated. Reports are sent monthly by mail.

12. *How is the data analyzed?*

- OEPA permit, Test America, uses SWIMWARE program is able to red flag permits violations. The remaining data is recorded on an Excel Spreadsheet and periodically reviewed to detect trends.
- Wastewater permit uses Excel Spreadsheet to monitor discharge performance.

13. *How is the data used and by whom?*

- The OEPA storm water data is used by the OEPA to track surface water quality. The airport uses this data to evaluate the Storm Water Pollution Prevention Plan.
- Wastewater discharge data is used by wastewater treatment to track influent to the plant in order to monitor influent loading.
- The airport monitors the discharge data to evaluate the effectiveness of the DFCS.

14. *Are there any trigger levels or take action levels (does certain data prompt some action by your agency)?*

- For the OEPA permit, there are specific pollutant concentration limits for certain storm water outfalls.

- For Wastewater discharge, there are limits for flow rate, **pH** & BOD5 load.

DATA **MANAGEMENT**

1. *What type of software is used for data tracking/managed?*

   - OEPA, **SWIMWARE** Program
   - Wastewater discharge and the Airport uses Excel software to track data internally

2. *Who is responsible for managing the data collected?*

   - Daniel Smith

3. *What is the level of effort associated with managing the data?*

   __ **Heavy**   _X_ Moderate

   __ Minimal   __ None

AVAILABILITY OF DATA TO PUBLIC

I. *Is there a legal or regulatory mandate that requires your agency or organization to make monitoring information available to the public?*

    _X_ Yes

    __ No

2. *After the data is processed, is the information made accessible to the public?*

    _X_ Yes

    __ No

    If not, are there plans to do so?

3. *Is data readily cross-referenced and geographically mapped to accurately describe environmental conditions within a local area on a regular basis?*

    _X_ Yes

    __ No

    a) *If yes, are maps available to the public?*

        _X_ Yes, upon request

        __ No

4. *Do you see benefits and/or obstacles in providing information in a timely manner, to the public?*

    __ Benefits   ,

    __ Obstacles

    _X_ Both

Please explain:

Due to the volume of data it may be difficult to provide it in a timely manner.

5. *What would you the estimate cost involved in making information available to the public in a timely manner?*

    _X_ Less than $5,000

    __ Between $5,000-$15,000

    __ Between $15,000-$50,000

    __ Greater than $50,000

APPENDIX E

REFERENCE LIST

Nature Internet Addresses

Audubon: www.dayton.net/Audubon

Indiana Nature Preserve:
www.dcwi.com/~eric/goot/natpsrv.htm

Land Trust **Alliance:**www.lta.org/

MetroParks:www.dayton.net/MetroParks/

National Fiih and Wildlife **Foundation:**www.nfwf.org

National Wildlife **Federation:**www.nwf.org .

Ohio Dept Natural **Resources:**www.dnr.state.oh.us/

Ohio EPA:www.epa.state.oh.us/

Sandhill Cranes:
http://ngp.ngpc.state.ne.us/wildlife/migrate/intro.htm

Society for Ecological Restoration:
nabalu.flas.ufl.edu/ser/SERhome.html

Society of Wetland **Scientist:**www.sws.org/

State Recycling:www.dnr.state.oh.us/odnr/recycling/

The Nature **Conservancy:**www.tnc.org/

Trust for Public **Land:**www.tpl.org/

USArmy Corps of **Engineers:**www.usace.army.mil/

USEPA:www.epa.gov/

USFish & Wildlife **Services:**www.fws.gov/

Weather: www.nws.noaa.gov/er/iln

Environmental Grps & Regulatory Agencies	Contacts Name	Contacts Phone Number	Contacts Business Address	WebSite
Regional Air Pollution Control Agency (Air Quality Issues)	Bruno Maier	(937) 225-4435	451 West Third St. Dayton, OH 45422	http://laa.co.montgomery.oh.us & www.rapca.org
Ohio EPA Divison of Air Pollution Control (Air Quality Issues)	Phil Henricks	(937) 285-6031	401 East Fiflh St. Dayton, OH 45402	www.epa.state.oh.us.epa
Ohio EPA Southwest District Office (Water Issues)	Diana Zimmerman	(937) 285-6440	401 East Fifth St. Dayton, OH 45402	www.epa.state.oh.us.epa
Montgomery County Sanitary Engineer (Water Issues)	Don Tucker	(937) 496-7020	4257 Dryden Rd. Dayton, OH 45439	
Dayton WVVTP (Water Issues)	Tom Shommer	(937) 268-9511	2800 Guthrie Rd. Dayton, OH 45418	
Wildlife District One (Wildlife Issues)	Dan Huff	(614) 644-3925	1500 Dublin Road Columbus, OH 43215	http://www.dnr.state.oh.us/odnr/wildlife/index.html
Wildlife District Five (Wildlife Issues)	Dave Graham	(937) 372-9261	1076 Old Springfield Pike Xenia, OH 45385	http://www.dnr.state.oh.us/odnr/wildlife/index.html
Miami Conservancy District (Water Issues)	Dr. Mark Bamberger	(937) 223-1271	38 E. Monument Ave. Dayton, OH 45402	
Miami Valley Regional Planning Commission	Scott Hammond	(937) 223-6323	40 W. Fourth St. Dayton, OH 45402	
City of Dayton Environmental Management (Well Field)	Jim Shoemaker	(937) 333-3727	320 W. Monument Ave. Dayton, OH 45402	http://www.ci.dayton.oh.us/
City of Dayton Water Supply &Treatment (Drinking Water Issues)	Martha Shwendlman	(937) 333-6030	3210 Chuck Wagner Dayton, OH 45414	
City of Dayton Environmental Management (Well Field Protection Issues)	Lee Drummond	(937) 333-3782	320 W. Monument Ave. Dayton, OH 45402	

Harrison Township (Well Field Prolection Issues)	William Singer	(937) 890-5611 Fax # 454-4831	5945 N. Dixie Dr. Dayton, OH 45414	
City of Riverside (Well Field Protection Issues)	Craig Kinley	(937) 233-I 801 Fax # 237-5965	1791 Harshman Rd. Riverside, OH 45424	
City of Vandalia (Well Field Protection Isssues)	Rober Galvin	(937) 898-5891 Fax # 898-3793	333 Bohanan Memorial Dr. Vandalia, OH 45377	
Wright-Patterson AFB (Well Field Protection Issues)	Linda Rogers	(937) 257-5535 Ext. 253, Fax # 658-I 534	88 ABW/EME, Bldg 89 5940 Pearson Rd. WP AFB Daylon, OH 45433-5332	
MCCHD-Environmental Health Landfill Inspection	Mark Case	(937) 225-4362	451 W. Third St. Dayton, OH 45422	
MCCHD-Environmental Health Land Paint Inspection & Assessment	Greg King	(937) 225-5553	451 W. Third St. Dayton, OH 45422	
MCCHD-Environmental Health (Well Water)	Mark Case	(937) 225-4362	451 W. Third St. Daylon, OH 45422	
MCCHD-Environmenlal Health Septic Syslems	Mark Case	(937) 225-4362	451 W. Third Sl. Dayton, OH 45422	
MCCHD-Environmental Health Well Field Protection Proaram	Tom Hul	(937) 225-5909	451 W. Third St. Davton, OH 45422	
Ohio EPA Division of Drinking & Ground Walers (Drinking Water Issues)	Chris Kenah, Heather Belfi	(614) 644-2752 Fax # 644-2909	122 S. Front St. IColumbus. OH 43215	
Ohio EPA Division of Drinking & Ground Water (Source Water Assessment Program, aka SWAP)	Chris Kenah, Heather Belfi	(6 14) 644-2752 Fax # 644-2909	122 S. Front St. Columbus, OH 43215	
U.S. EPA, Source Waler Protection Program	Betsy Henry (Coordinator)	(202) 260-2399 Fax # 260-0732	USEPA MC 4606 401 M St, SW E. Tower, Rm 1129 Washington, DC 20460	henry.betsy@epa.gov

The Groundwater Foundation (Ground-Water Guardian [GWG], Festival)	Rachael Herpel, GWG Jonna Jackson, GWG	(402) 434-2740 Fax # 434-2742	P.O. Box 22558 Lincoln, NE 68542-2558	rachael@groundwater.org
City of Dayton Environmental Management (Children Ground Water Festival)	Michele Jones	(937) 333-3796	320 W. Monument *Ave.* Dayton, OH 45402	
City of Dayton Water Supply & Treatment (Division of Ground Water)	Phillip Vanhtta	(937) 333-6093	3210 Chuck Wagner Lane Dayton, OH 45414	
Dayton International Airport (Environmental Program)	Daniel Smith	(937) 333-3725	320 W. Monument Ave. Dayton, OH 45402	

APPENDIX F

MIAMI CONSERVANCY DISTRICT

Groundwater 2000 Begins
Groundwater Quality Monitoring Program

Mark Bamberger, Ph.D.

For decades. The Miami Conservancy District's groundwater efforts focused on monitoring groundwater levels within the Great Miami Buried Valley Aquifer. Although those efforts are continuing. beginning in May 1999, the Groundwater 2000 program began monitoring **groundwater quality** to help characterize the quality of water used throughout the basin.

The Groundwater 2000 Program began monitoring water quality in 15 production wells around the basin in May 1999. These "charter" wells were chosen after an intensive survey of ongoing water quality monitoring programs maintained by other agencies (e.g., the Ohio EPA. counties, and municipalities). Twenty additional wells will be added in the fall of 1999, bringing the first year total to 35. Subsequently, the number of wells in the network will grow by roughly 5-10 wells per year for the next five years (Figure 3).

The network will be distributed throughout the Great Miami River Basin (see Fig. 4-next page) and will help to identify longer-term trends in water quality. Geologically. the program will·focus on the Great Miami Buried Valley Aquifer, which provides drinking water to abour 75% of the population within the Miami Valley. The water quality program will include wells in the limestone and upland till aquifers as well, in order to provide geographic distribution throughout the basin.

Sampling and analysis at every well in the program will include the field parameters of pH, specific conductivity, and water temperature, along with laboratory analyses .of inorganic and organic compounds: Field and inorganic parameters will be analyzed semiannually. After a baseline of four semiannual rounds is established, organics will be analyzed every 18 months.

Although no single program can monitor the groundwater quality everywhere within the basin, one of the goals of this Program is to complement (but not duplicate) ongoing monitoring efforts by others to look at long-term trends. The data management system for this program has been designed to be compatible with other programs, such as the Ohio EPA's Ambient Network, so data may be interchanged easily. In fact, Groundwater 2000 staff are in the process of acquiring the Ambient Network and other water quality data to integrate into the Groundwater 2000 information management system.

Look for those to be listed soon, along side Groundwater 2000 water level and quality data. If you have questions or comments about this program. please contact Mark Bamberger at 937.223.1278 Ext. 3200 or if preferred, you may e-mail at mbamberger@conservancy.com.◆

Figure 3

Projected Number of Groundwater Quality Monitoring Wells
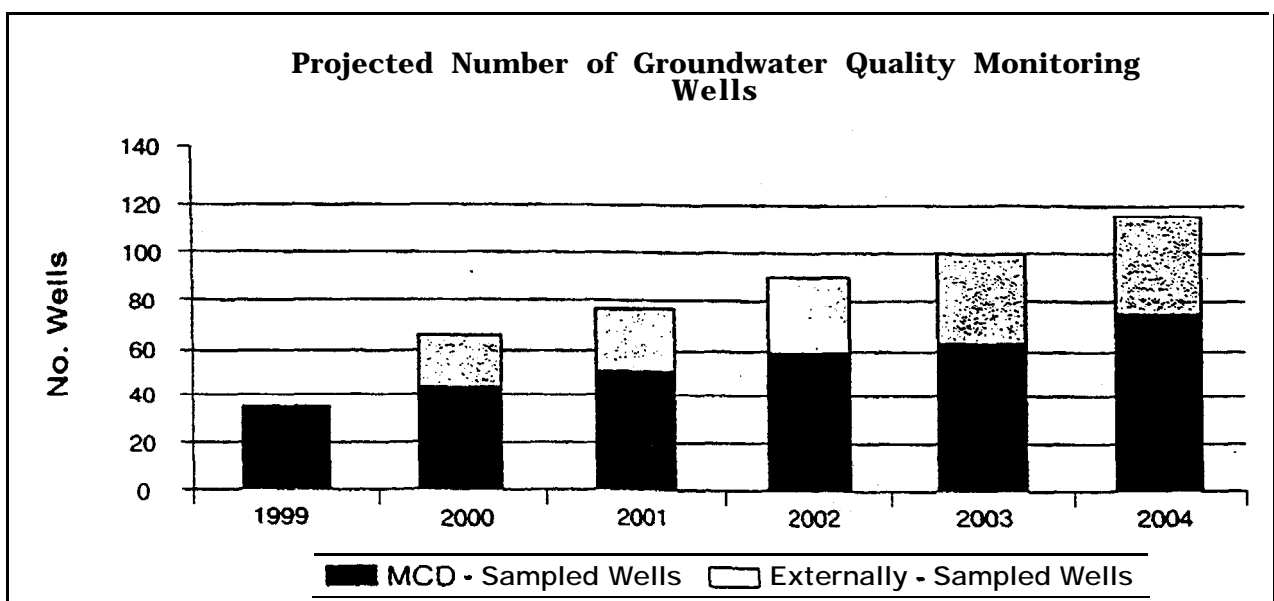
DEPARTMENT OF WATER

Well Field Protection Program

DAYTON WELL FIELD PROTECTION PROGRAM
REGULATED SUBSTANCE ACTIVITY INVENTORY REPORT (RSAIR)

The City of Dayton adopted a Well Field Protection Program designed to protect portions of the underground aquifer, the major source of drinking water in this area, on August 3, 1988. The program reduces the threat of drinking water contamination by controlling the volume of hazardous chemicals or "Regulated Substances" in the areas surrounding the region's well fields. Businesses located within the Well Field Protection Overlay District which use Regulated Substances in excess of the specified excluded amounts must periodically complete a Regulated Substance Activity Inventory Report (RSAIR). The program was amended on October 4, 1995. The reporting of annual use amounts was eliminated, and many new items were excluded from reporting. Please read the new instructions carefully to take advantage of these new provisions. For assistance with the RSAIR, call the Division of Environmental Management at 443-3725.

SUBMIT RSAIR TO: .   Director, Department of Water
                                  Attention: Environmental Management
                                  320 W. Monument Ave.
                                  Dayton, OH 45402

REGULATED SUBSTANCES

Regulated Substances are defined in the ordinance as chemicals or mixtures of chemicals that are health hazards. Regulated Substances include:

(A)   Chemicals for which there is scientific evidence that acute or chronic health effects may result from exposure including carcinogens, toxic and highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes or mucous membranes-

(B)   Mixtures of chemicals which have been tested as a whole and have been determined to be a health hazard.

(C)   Mixtures of chemicals which have not been tested as a whole but which contain any chemical which has been determined to be a health hazard and which comprises one (1) per cent or greater of the composition on a weight per unit weight basis, and mixtures of chemicals which include a carcinogen if the concentration of the carcinogen in the mixture is one tenth of one (0.1) per cent or greater of the composition on a weight per unit weight basis.

(D)   Ingredients of mixtures prepared within the Well Field Protection Overlay District in cases where such ingredients are health hazards but comprise less than one tenth of one (0.1) per cent of the mixture on a weight per unit weight basis if carcinogenic, or less than one (1) per cent of the mixture on a weight per unit weight basis if non-carcinogenic.

(E)   Petroleum and non-solid petroleum derivatives (except non-PCB dielectric fluids in use in equipment for the transmission of electric power to homes and businesses).

To determine whether a material is a Regulated Substance the Material Safety Data Sheet (MSDS) should be consulted. If the MSDS does not clearly indicate whether the material is a health hazard, the manufacturer, vendor, or distributor of that product should be contacted.

The following substances are NOT Regulated Substances under the program and do not need to be listed on the RSAIR:

Argon	Diatomaceous Earth	Nitrogen
Calcium Carbonate	Helium	Oxygen
Carbon Dioxide	Hydrogen	Silicon Dioxide

EXEMPTED SUBSTANCES

Substances which are health hazards but can be demonstrated to pose NO threat to ground water may be exempted from regulation. Individuals desiring to apply for the exemption of a substance can receive details from the City of Dayton Office of Environmental Management at 443-3725. The City of Dayton's Environmental Advisory Board reviews the applications for exemption. The following substances have been exempted as of October 1, 1995, and do not need to be listed on the RSAIR:

Acetylene	Cellulose Filteraid	Dow Coming 732 Multi-purpose Sealant - Clear
Activated Carbon	Portland Cement	Dow Coming 999A Silicone Glazing Sealant - White
Aluminum Oxide	Propane	Trade Mate Silicone Glazing Sealant - Clear
Calcium Hydroxide	Silica Gel	

CATEGORY DEFINITIONS WITH EXCLUDED AMOUNTS

Regulated Substances are divided into four categories based on how they are used, as defined below. In any category, if the total of the Maximum Daily Inventories for all of the substances in that category is less than that category's Excluded Maximum Daily Inventory, then the substances in that category do not need to be itemized on Form B, and a "0" can be entered as the Maximum Daily Inventory for that category on Form C. If that is true for all four categories, no substances need to be itemized, and Forms B and C can be completed with an "N/A". In view of this, it may be helpful to determine the category totals on a worksheet in advance, to see if some items can be left off the RSAIR.

Regular Regulated Substances (R)

Regulated Substances associated with routine daily operations, including routine maintenance.

      Excluded Maximum Daily Inventory: 160 pounds   (20 gallons)

Maintenance Regulated Substances (M)

Regulated Substances that are actively in use for non-routine maintenance or repair of property.

      Excluded Maximum Daily Inventory: 400 pounds   (50 gallons)

<u>Cleaning **Regulated** Substances **(C)**</u>

Regulated Substances which are cleaning agents, provided however such cleaning agents are packaged for personal or household use or are present in the same form and concentration as a product packaged for use by the general public- In no case shall Regulated Substances claimed under this exclusion include chlorinated solvents and non-chlorinated solvents which are capable of being derived from petroleum or coal tar.

    Excluded Maximum Daily Inventory: 8OOpounds   (100 gallons)

<u>Laboratorv Regulated Substances **(L)**</u>

Regulated Substances which are used for medical and research laboratory purposes, provided however Regulated Substances shall be stored, handled or used in containers not to exceed live (5) gallons or forty (40) pounds of each substance.

    Excluded Maximum Daily Inventory: 2OOopounds   **(250 gallons)**

OTHER EXCLUSIONS FROM REPORTING REQUIREMENTS

In addition to the exclusions by category above, there are other groups of Regulated Substances which have been excluded **from** reporting requirements These substances do not have to be listed on the **RSAIR.** However, they are still subject to the rest of the Well Field Protection Program, such as the spill reporting requirements, so even these Regulated Substances should be handled safely. Here are brief descriptions of the additional exclusions:

1.   Regulated Substances for single or two-family residences and the occupants' vehicles.
2.   Regulated Substances in a vehicle in transit, provided it is stopped for less than 72 hours.
3.   Material prepackaged for personal or household use as food or drink for man or animals.
4.   Prepackaged items for **personal** hygiene and cosmetics, such as shampoos, deodorants, etc., but not the warehousing, **manufacturing,** extraction, or repackaging of such items.
5. Office supplies that are prepackaged and for on-site use, but not the warehousing, **manufacturing**, extraction, or repackaging of such items.
6.   Refrigerants in equipment used for on-site air cooling or in household appliances-
7.   Regulated Substances used in construction for which **all** necessary permits have been obtained, provided they do not threaten surface or ground water, and provided fuel stored on site is within secondary containment.
8.   Regulated Substances in operable motor vehicles or boats that are used solely for the operation of the vehicle, such as gasoline or oil, but not the tanker portion of a tank truck.

REPORTING REQUIREMENTS

According to **R.C.G.O.** § 53.30, except as excluded, any owner or occupant of any land in the Well Field Protection Overlay District shall file a Regulated Substance Activity Inventory Report with the Director of the Dayton Water Department, by March 1 .of every odd-numbered year.

THE NEXT REPORT **SHALL** BE FILED BY MARCH **1, 1999.**

According to § 53.30(A)(2), any prospective new owner or occupant of any land in the Well Field Protection Overlay District shall file a Regulated Substance Activity Inventory Report (RSAIR) prior to occupying the site, and thereafter as described above.

The attached Regulated Substance Activity Inventory Report (RSAIR) consists of three parts, Forms A, B, and C. For Form B, if the number of Regulated Substances exceeds the spaces available, this form may be photocopied and as many forms as necessary should be completed. All three parts must be completed.

INSTRUCTIONS FOR FILLING OUT FORM A

(1)   TOTAL MAXIMUM DAILY INVENTORY IN POUNDS, FROM FORM C, LINE E - Copy the grand total from the last line on Form C to this line.

(2)   COMPANY - Name of the company owning the business.

(3)   FACILITY NAME - If the name of the facility is different than the company name, enter the name of the facility.

(4)   DIVISION - If the plant is operated by a division of the company, list the division name.

(5)   STREET ADDRESS, CITY, STATE, AND ZIP CODE of the facility.

(6)   TELEPHONE - Main telephone number of the facility.

(7)   24 HOUR TELEPHONE - If the facility has a 24 hour phone number different from (6).

(8)   FAX NUMBER - If the facility has a FAX machine.

(9)   FACILITY CONTACT - Name of responsible person in charge who can respond to questions regarding the type and amount of Regulated Substances on site.

(10) WORK PHONE - Telephone number and extension of the Facility Contact.

(11) EMERGENCY CONTACT - Name of facility emergency response person to be contacted in the event of a fire, explosion, or chemical spill.

(12) WORK PHONE - Work telephone number and extension of the Emergency Contact.

(13) HOME PHONE - Home telephone number of the Emergency Contact.

(14) BRIEF DESCRIPTION OF BUSINESS ACTIVITIES AND PROCESSES - Self-explanatory.

(15) PROPERTY OWNER'S NAME - Name of the landowner of this property.

(16) PROPERTY OWNER'S TELEPHONE - Landowner's telephone number.

(17) PROPERTY OWNER'S STREET ADDRESS, CITY, STATE, AND ZIP CODE - Landowner's address-

(18) CERTIFICATION, OF COMPANY OFFICIAL - A responsible official of the company, facility, corporation or proprietorship such as the owner, president, vice-president, plant manager, or environmental manager must sign the form certifying that the information is valid. Provide date, telephone number, printed or typed name and title, and signature.

INSTRUCTIONS FOR FILLING OUT FORM B

(1) COMPANY - Company name as listed in (2)-(4) on Form **A.**

(2) ADDRESS - Address as listed in (5) on Form **A.**

(3) **CAT -** Category **column.** List the letter (R, M, C, or L) that represents the category of the Regulated Substance. The definitions of the categories are above.

(4) C. A. S. NUMBER - Chemical Abstract Service Number, a unique identification number assigned by this company to all pure chemicals and many mixtures. C. A. S. Numbers are usually listed on a substance's Material Safety Data Sheet (MSDS) and in many reference handbooks- For reporting mixtures, see number (6) below.

(5) SPECIFIC CHEMICAL NAME - If the Regulated Substance is a pure chemical, list the chemical name under the Specific Chemical Name column Examples are benzene, chlorine, and sodium **cyanide.** For reporting mixtures, see number (6) below.

(6) COMMON OR TRADE NAME - List the Common or Trade Name in this column. Examples are 5W30 oil, mineral spirits, and gasoline. If the Regulated Substance is a mixture, the information can be presented in one of two ways, either **A** or B below.
  A: Use one line in the C. A. S. NUMBER and SPECIFIC CHEMICAL. NAME columns for each component of the mixture. This information should be on the MSDS. Draw a set of brackets enclosing all of these components of the mixture and pointing to a single line in the COMMON OR TRADE NAME column. Use that line for the name of the mixture, and the physical state and inventory information.
  B: List the name of the mixture in the COMMON OR TRADE NAME column. Send the MSDS for the mixture. In the SPECIFIC CHEMICAL NAME column say, "MSDS Enclosed." If several MSDSs are enclosed, number them and include the number in this column.

(7) MIX / PURE - Enter "M" if the Regulated Substance is a mixture, or "P" if it is a pure substance.

(8) STATE - S / L / G - Enter the initial of the physical state of the Regulated Substance, "S" for solid, "L" for liquid, or "G" for gas.

(9) MAXIMUM DAILY INVENTORY IN POUNDS - From inventory records, operating records, or other means calculate if possible, and if not estimate the MAXIMUM quantity of the Regulated Substance that will ever be present on site. This would likely be the quantity present during peak season or immediately after a bulk delivery. Enter the quantity in pounds. To convert cubic feet of gas to pounds, use the density factors listed in the MSDS or other references. To convert gallons of liquid to pounds, either use the density factors as mentioned above, or use the average value of eight pounds per gallon.

(10) TOTAL FOR THIS PAGE - Sum of all the items on this page.

(11) TOTAL FOR ALL PREVIOUS PAGES - Sum of all previous page totals. On page 1 it will obviously be 0. After that, it will be the Cumulative Total from the previous page.

(12) CUMULATIVE TOTAL - Sum of the two totals above it, the TOTAL FOR THIS PAGE and the TOTAL OF ALL PREVIOUS PAGES

INSTRUCTIONS FOR FILLING OUT FORM C

(1) COMPANY - Company name as listed in (2)-(4) on Form A.

(2) ADDRESS - Address as listed in (5) on Form A.

(3) CATEGORY and QUANTITY IN POUNDS - In any category, if the total of the Maximum Daily Inventories for all of the substances in that category is less than that category's Excluded Maximum Daily Inventory, shown in parentheses to the right of the line, enter "0" as the Maximum Daily Inventory for the category. "0" will be uriderstood to be less than or equal' to the category's Excluded Maximum Daily Inventory in parentheses.

(4) **LINE (A) -** For all the Regulated Substances listed on Form B in the Category R, add their Maximum Daily Inventories. Enter the sum here, or "0" if appropriate, as explained in (3).

(5) **LI NE (B) -** For all the Regulated Substances listed on Form B in the Category M, add their Maximum Daily Inventories. Enter the sum here, or "0" if appropriate, as explained in (3).

(6) **LINE (C) -** For all the Regulated Substances listed on Form B in the Category C, add their Maximum Daily Inventories. Enter the sum here, or "0" if appropriate, as explained in (3).

(7) **LINE (D) -** For all the Regulated Substances listed on Form B in the Category L, add their Maximum Daily Inventories. Enter the sum here, or "0" if appropriate, as explained in (3).

(8) LINE (E) - Add Lines A, B, C, and D above for the Total Maximum Daily Inventory. If "0" is the correct value for the Maximum Daily Inventory for all four categories according to (3) above, then review the directions on page 2 in the first paragraph under "Category Definitions with Excluded Amounts".

For assistance with the RSAIR, call the Division of Environmental Management at 443-3725.

WELL FIELD PROTECTION PROGRAM
REGULATED SUBSTANCE ACTIVITY INVENTORY REPORT (RSAIR)

'AGE ___ OF ___   DATE _____

(1) TOTAL MAXIMUM DAILY INVENTORY
IN POUNDS, FROM FORM C. LINE E _____

2) COMPANY / (3) FACILITY NAME / (4) DIVISION

5) STREET ADDRESS, CITY, STATE, AND ZIP CODE

6) TELEPHONE   (7) 24 HOUR TELEPHONE   (8) FAX NUMBER

9) FACILITY CONTACT / (10) WORK PHONE

11) EMERGENCY CONTACT / (12) WORKPHONE I (13) HOMEPHONE

(14) BRIEF DESCRIPTION OF BUSINESS ACTIVITIES AND PROCESSES

(15) PROPERTY OWNER'S NAME / (16) PROPERTY OWNER'S TELEPHONE

(17) PROPERTY OWNER'S STREET ADDRESS. CITY, STATE, AND ZIP CODE

(18) CERTIFICATION OF COMPANY OFFICIAL

I CERTIFY ALL INFORMATION AND DATA CONTAINED IN THIS NOTIFICATION FORM ARE TRUE AND
CORRECT TO THE BEST OF MY KNOWLEDGE.

SIGNATURE   DATE   TELEPHONE

NAME (PRINT)   TITLE   ,

FORMA- 10 / 95

WELL FIELD PROTECTION PROGRAM
REGULATED SUBSTANCE **ACTIVIN INVENTORY REPORT (RSAIR)**

COMPANY _____ PAGE_ ___ OF ___

ADDRESS _____ DATE _____

C A T	C. A. S. NUMBER	SPECIFIC CHEMICAL NAME	COMMON OR TRADE NAME	MIX / PURE	STATE - S / L / G	MAXIMUM DAILY INVENTORY IN POUNDS
					TOTAL FOR THIS PAGE	
					TOTAL OF ALL PREVIOUS PAGES	
					CUMULATIVE TOTAL	

FORM B - 10 / 95

WELL FIELD PROTECTION PROGRAM
REGULATED SUBSTANCE ACTIVITY INVENTORY REPORT (RSAIR)

COMPANY_____   PAGE_O___ __F_

ADDRESS_____   DATE_____

CATEGORY   **QUANTITY IN POUNDS**

REGULAR REGULATED SUBSTANCES(R)

. **(A) MAXIMUM DAILY INVENTORY**   _____ (160'

MAINTENANCE REGULATED SUBSTANCES (M)

  (B) MAXIMUM DAILY INVENTORY   .   _____ (400,

CLEANING REGULATED SUBSTANCES (C)

  (C) MAXIMUM DAILY INVENTORY   _____ (800'

LABORATORY REGULATED SUBSTANCES (L)

  (D) MAXIMUM DAILY INVENTORY   _____(2000

(E) TOTAL MAXIMUM DAILY INVENTORY IN POUNDS   _____
     SUM OF LINES A, B, C, AND D

NOTE: FOR ANY OF THE FOUR TOP LINES. A - D, IF THE QUANTITY OF REGULATED SUBSTANCES
EXCEEDS THE VALUE IN PARENTHESES AT THE END OF THE LINE, A REGULATED SUBSTANCE ACTIVITY
INVENTORY REPORT (RSAIR) MUST BE FILED WITH THE DIRECTOR OF THE DEPARTMENT OF WATER OF
THE CITY OF DAYTON.

SUBMIT RSAIR TO: DIRECTOR, DEPARTMENT OF WATER
                          ATTENTION: ENVIRONMENTAL MANAGEMENT
                          320 W. MONUMENT AVE.
                          DAYTON, OH 45402

FOR ASSISTANCE COMPLETING THE RSAIR CALL THE DIVISION OF ENVIRONMENTAL MANAGEMENT
AT 443-3725.

FORM C - 10/95

OHIO DIVISION OF WILDLIFE

Fiscal Report

Expenditures

Wildlife Management - $9,785,731.54

The Wildlife Management and Research Group is responsible for managing all wildlife, assisting landowners with habitat improvements, managing land for wildlife and wildlife-oriented recreation. and conducting research to be used in improving wildlife populations.

Fish Management - $7,506,557.42

The Fish Management and Research Group maintains the aquatic resources of the state. Biologists and other fisheries personnel manage water areas by improving spawning habitat and fishing access, recommending regulations. monitoring fish populations and angler harvest, stocking, and conducting research.

Information and Education - $4,155,975.97

Money is spent for hunter, trapper and angler education, the printing of licenses and regulations, educational materials for Ohio's school teachers, the *Wild* Ohio television program and magazine. information diitributfon to medii and the public. and the creation and printing of maps and other publications.

Statement of Revenue - FY99

Resident Fishing License	$10,627,765.50
Non-Resident Fishing License	$1,484,772.00
Resident Hunting License	$5,418,286.00
Non-Resident Hunting License	$1.134.796.00
Deer Permits	$6,655,021.00
Turkey Permits	$1,171,710.00
Free License Reimbursement	$970,000.00
Federal Aid (P-R) Wildlife Restoration	$2,814,920.65
Federal Aid (D-J) Sport Fish Restoration	$4,557,996.84
Wetlands Habitat Stamp Sales	$323,693.00
Wildlife Diversity & Endangered Species Fund	$1,297,968.00
Fines	$372,608.14
Other Revenue	$3,907,409.11
Total	$40,736,946.24
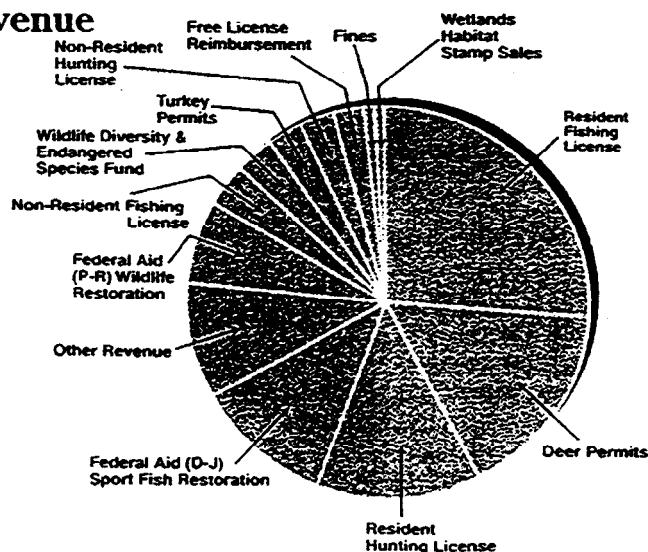
Fiscal Year 1999

Law Enforcement - $3,004,860.63; Wildlife Officers - $5,875,045.28

Enforcement is a fish and wildlife management tool designed to protect the wildlife resource ensure fair and equitable use, protect state property, and implement wildlife, litter, and pollution statutes- Wildlife officers are assigned to each of Ohio's 88 counties and Lake Erie.

District and Statewide Operations - $11,541,040.20

Expenditures in this category include money spent for fiscal and business management, licensing and permits, property management, computer services, the construction crew, environmental research and review, and wetlands habitat restoration.

Endangered Species and Wildlife Diversity

Income for these projects comes from the sale of wildlife license plates and donations to the wildlife checkoff program on state income tax forms. *This income is expended through projects in fish and wildlife management, information and education, and law enforcement.* These monies are used specifically to achieve endangered species and wildlife diversity goals.

Capital Improvements - $3,408,100.62

These funds are spent on land purchases and the repair, maintenance, renovation, and construction of facilities such as fishing access sites, boat ramps, hatcheries, and offices.

Statement of Expenditures - FY99

Administration	$2,954,222.86
Information & Education	$4,155,975.97
Law Enforcement;	$3,004,860.63
Wildlife Officers	$5,875,045.28
Fish Management	$7,506,557.42
Wildlife Management	$9,785,731.54
District & Statewide Operations	$11,541,040.20
Capital improvements	$3,408,100.62
Total	$48,231,534.52

Revenue

Expenditures
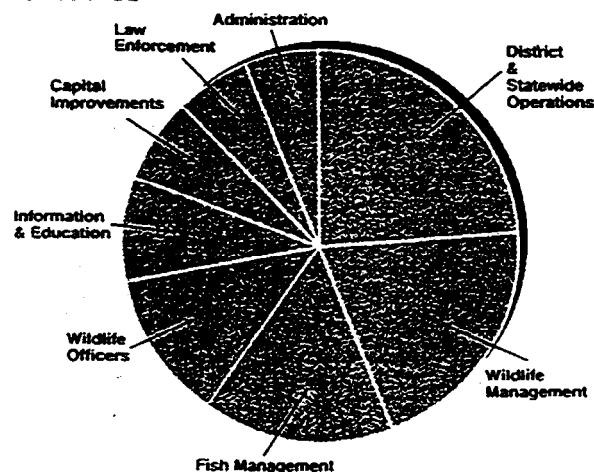
Fish Management and Research:

● The Division stocked more than 30 million fish, reared at six state hatcheries. This total included: 38,000 brown trout, 356,000 channel catfish, 361,000 hybrid striped bass, 7 million saugeyes, 3.6 million walleyes, 225,000 steelhead, and 26,500 muskies.

● The Castalia State Fish Hatchery, located in Erie County and purchased in 1997, was brought fully on-line. This hatchery has contributed significantly to the expansion of the Division's trout and steelhead programs. Catchable trout stockings have nearly tripled, and steelhead stockings will double in the spring of 2000.

● Also at Castalia Hatchery, a public fishing program was instituted. A lottery-style drawing was held for anglers to fish for trout in the half-mile section of Cold Creek that flows through the hatchery property. Response from the public was outstanding, with approximately 4,000 anglers applying for this first-time opportunity. The majority of successful applicants caught their limit of five trout.

● Approximately 20 acres were purchased along the Ohio River near the village of Racine in Meigs county to be developed for boat and shoreline fishing access.

● At Rush Run Lake in Preble County, the boat launch ramp was replaced and accessible shoreline fishing platforms added.

● At Knos Lake in Knos County, the north shore fishing access was completely renovated.

● More than 5,000 advanced fingerling muskies (8 to 10 inches in length) were stocked in Caesar Creek Lake in Warren County for the first time. The Division expects this lake to become an outstanding muskie fishery in southwest Ohio.

● The Division has linked recording depth finders, laptop computers, and Global Positioning System (GPS) technology to successfully create new, highly accurate and detailed contour maps for lakes of the state. These fishing maps are being made available to the public on the Division's Web site as they are completed.

● The Lake Erie Research Unit took delivery of the 53-foot research vessel *Explorer*, which will operate out of Sandusky, Ohio. This new boat will greatly improve biologists' ability to collect data on Lake Erie fish populations.

● The popularity of smallmouth bass fishing on Lake Erie continues to increase. In response, the Division proposed more conservative fishing regulations (14-inch minimum length limit, 5-fish daily bag limit) on Lake Erie smallmouth bass, to maintain the future quality of the fishery.

● Implementation of Ohio's Aquatic-Nuisance Species Management Plan continues. Accomplishments during the year included a poster display at the Columbus Zoo, and distribution of decal rulers and an educational video.

● More than one mile of Fish Creek in Williams County was protected through funds from the Natural Resources Damage Assessment oil spill settlement. Fish Creek holds a diverse fish population and endangered mussels.
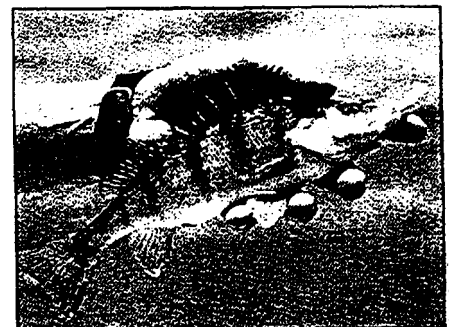
Wildlife Management and Research:

● An endangered insect was reintroduced to Ohio. American burying beetles were released in the southeast part of the state.

● A record 57 nesting pairs of bald eagles fledged a record 73 eaglets.

● Thirty-nine young ospreys, obtained from Maine, Maryland, and Virginia, were released into the wilds of Ohio. Five additional pairs of ospreys nested and fledged nine young.

● Division of Wildlife biologists located a record 36 pairs of barn owls. The previous record was 27 pairs.

● Based upon confirmed sightings, 22 individual wild black bears were identified in the state.

● A record 14,119 wild turkeys were taken by hunters during the spring wild turkey hunting season, up 8.8 percent from the previous year.

● With assistance from a number of private national conservation organizations (National Wild Turkey Federation, Ducks Unlimited, National Rifle Association, Ruffed Grouse Society), the Division of Wildlife purchased the 1,080-acre Dorset Wildlife Area in Ashtabula County.

● Twenty-nine trumpeter swans (15 at Mosquito Creek Wildlife Area and 14 at Mallard Club Wildlife Area) were released to the wild. In addition, eight pairs of swans attempted to nest and one young was fledged this past nesting season.

● Twelve pairs of peregrine falcons fledged 13 chicks.

● One-hundred-fifty-five wild quail were live-trapped in Kansas, transported to Ohio, and released in the east-central part of the state in an attempt to establish a population of these birds in suitable yet unoccupied quail habitat.

● Most likely due to the drier than normal weather this past spring and summer, many species of game birds had excellent reproductive success during the past nesting season. For example, summer wild turkey observations showed 3.6 poults for each hen seen. This is the highest poult-to-hen ratio since 1993 and the second highest since 1981. In addition, biologists reported good numbers of young ruffed grouse captured and banded for an ongoing harvest mortality study.

Information and Education:

- Initiated in 1995, the *Backyards for Wildlife* site certification program has now recognized more than 1,400 Ohio backyards for providing food, water and shelter for wildlife.

- The annual Wildlife Diversity Conference, sponsored by the Division of Wildlife, was held last March at The Ohio State University and had a record attendance of nearly 500 wildlife enthusiasts. The theme of the conference was Ohio wetlands.

- The new Wildlife Call Center increased its activity and efficiency during the year, with telephone operators handling a record 115,000 toll-free wildlife informational calls and requests for publications by the public.

- *Wild Ohio* print magazine climbed to a record 215,000 magazines printed per quarterly issue. The magazine continues to be free of charge to those requesting it.

- Certified volunteer Ohio hunter education instructors trained 20,160 hunter education students throughout the year.

- More than 50,000 Ohio residents (mostly young people) participated in the Hooked On Fishing Not On Drugs program administered by the Division of Wildlife.

- *Wild Ohio Video Magazine* marked its third full year in production completing 26, 30-minute television shows during the year. It aired on approximately 20 stations statewide.

- Efforts to promote the Lake Erie fishery resulted in the best press coverage of Governor's Fish Ohio Day in recent years.

- A record number 110,000 visitors logged onto the Division's newly designed Internet Web site.

- Five thousand Ohio educators were trained at more than 200 workshops throughout the state to implement Project WILD, an award-winning wildlife conservation curriculum. Since the project's inception, 19,000 educators have been trained to use the materials.

- Forty-five Ohio schools are now officially designated as Wild School Sites, including 12 certified this past year.

- The Aquatic Education Center at Put-In-Bay on South Bass Island attracted 15,000 visitors from early May through Labor Day.

- Legislation was passed in December 1998 creating a bald eagle license plate for Ohio. Revenue from the sale of this plate will specifically benefit bald eagles through habitat acquisition, wetland restoration and bald eagle management.

  Wildlife Conservation License Plates (cardinal plates) sold well during the year. 53,228 plates raised $798,120 for wildlife diversity projects.
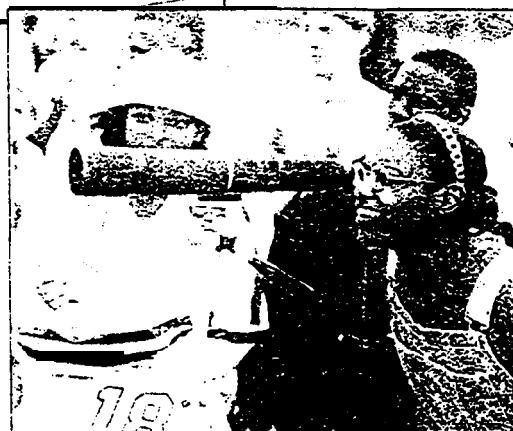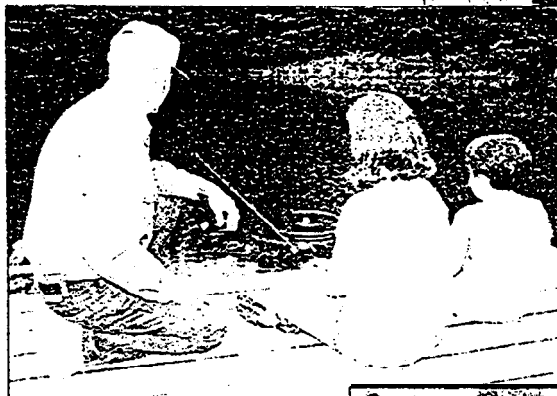
Wildlife Law Enforcement:

- Ohio wildlife officers made a significant number of white-tailed deer poaching cases throughout the year 1,162.

- Forty incidents of personal injury or property damage related to hunting were investigated. Also, 291 arrests were made for hunting without permission, based on complaints of the landowner.

- Lake Erie law enforcement officers made 512 arrests, primarily for sport fishing and commercial fishing law violations. There were no violations observed from Canadian commercial fishermen. The international boundary between Ohio and Canada was routinely monitored by aircraft.

- Wildlife officers investigated approximately 108 pollution incidents throughout the state. A total of 3,953 wild animals died due to the pollution, the majority of which were fish. In 19 of these incidents, claims were submitted to the polluter. The Division collected $26,288.91 in damages for these 10 settlements.

- Wildlife officers made a total of 6,196 arrests for various wildlife law violations. During the year 54,315 anglers and 35,200 hunters were contacted in the field. The following table shows the total dollar amount of fines collected and the number of arrests by wildlife district.

	Total Amount of Fines Collected	Arrests
District One	$46,091.00	901
District Two	$87,092.00	1551
District Three	$65,331.00	1185
District Four	$101,179.00	1163
District Five	$72,935.50	954
Lake Erie	$23,885.00	512
Total	$397,313.50	6196

Environmental Section:

- A new relationship was initiated between the Division and the Ohio Department of Transportation (ODOT), to assist the highway department in fulfilling its wetland mitigation obligations. Projects were implemented in Sandusky, Stark, and Muskingum counties.

- The Division of Wildlife took over the implementation of the Ohio ginseng management program from the Division of Natural Areas and Preserves.

- A "Tactical Plan for the Conservation of the Grand River Lowlands" was completed. Early fruits of this effort include signing of a memorandum of understanding with the Ashtabula Soil and Water Conservation District, which provides a mechanism for funding conservation easements in the Grand River watershed.
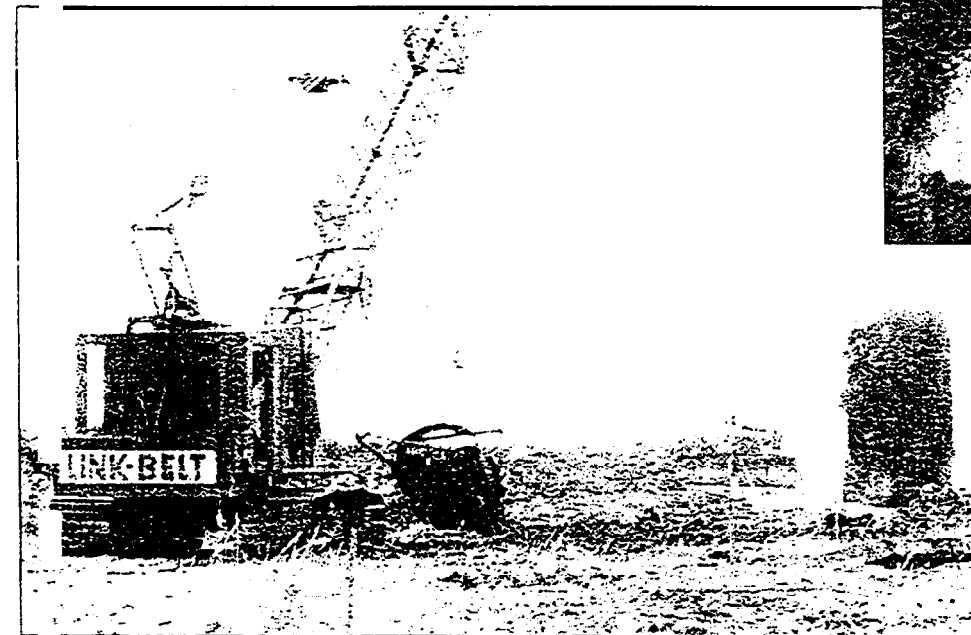
- A state-of-the-art shooting range was constructed at the Grand River Wildlife Area, complete with lead recovery and other environmental protection capabilities. Plans for a similar shooting range facility at the Woodbury Wildlife Area were completed.

- Three acid mine drainage abatement project proposals on Division lands were initiated.

- On the Egypt Valley Wildlife Area, 119,000 trees were planted.
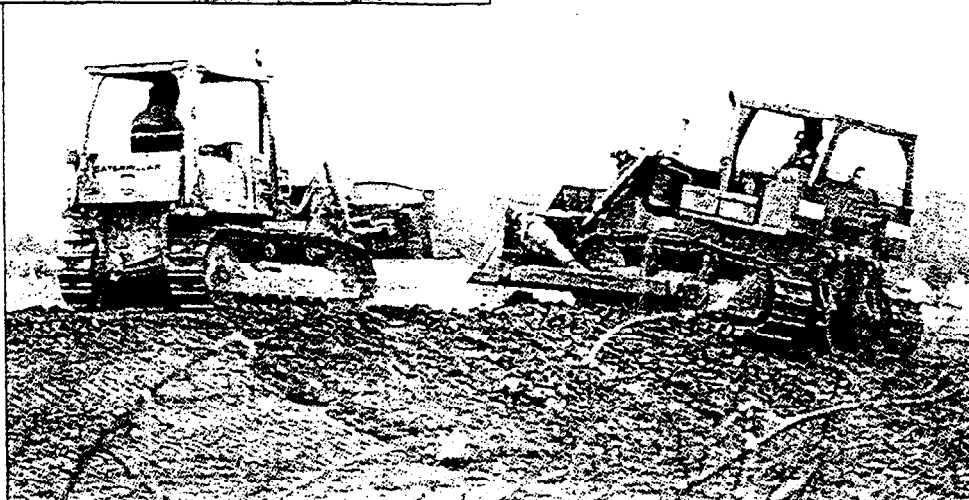
MIAMI VALLEY REGIONAL PLANNING COMMISSION

THE MIAMI VALLEY
REGIONAL PLANNING
COMMISSION

OUR

Future in

PROGRESS

THE MIAMI VALLEY REGIONAL PLANNING COMMISSION (MVRPC) IS A VOLUNTARY ASSOCIATION OF NUMEROUS LOCAL GOVERNMENTS AND NON-GOVERNMENTAL ORGANIZATIONS. THESE ORGANIZATIONS WORK TOGETHER TO UNDERSTAND AND ADDRESS THE PUBLIC POLICY TRENDS, ISSUES AND QUESTIONS THAT **FACE OUR REGION**... A REGION MADE UP OF **six** COUNTIES: CLINTON, DARKE, GREENE, MIAMI, MONTGOMERY AND PREBLE.

MVRPC FOSTERS A COOPERATIVE APPROACH IN ADDRESSING THIS AREA'S DEVELOPMENT AND IMPROVEMENT PLANS, AND ASSISTS LOCAL GOVERNMENT IN FINDING THE MOST EFFECTIVE USE OF AVAILABLE RESOURCES.

TO BETTER UNDERSTAND THE IMPORTANT ROLE THAT COMMISSION MEMBERS PLAY IN THIS REGION, IMAGINE THEM AS "CARETAKERS" OF THREE OF OUR MOST VALUABLE RESOURCES HUMAN, NATURAL AND FINANCIAL.

# MVRPC SERVICES . . .
TABLE OF CONTENTS

Mapping and GIS
Charting our past and our future.,.

Did you know that MVRPC has a wealth of mapping and graphics resources available to the people of this region — available to you? These resources include:

- Base maps covering our geographic area at a variety of scales;
- Aerial photographs at varying time intervals, 1962 - 1995;
- 1990 census maps,
- Various groundwater. land use, open space. transportation and historical inventories.

In addition, MVRPC currently is expanding its Geographic Information System (GIS). This computerized mapping database program will make mapping the Miami Valley easier and faster. These efforts are being coordinated with those of local governments to promote consistency and compatibility among systems.
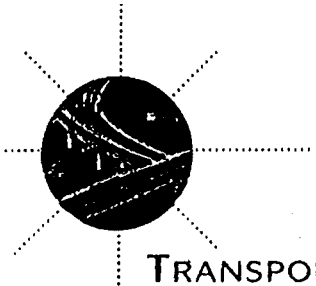
TRANSPORTATION PLANNING
Paving the road to success.,.

When you back out of your garage and drive down the road that crosses the bridge that leads to the new highway that gets you to work more quickly and easily than your old route . . that's MVRPC working for you.

MVRPC is designated as the Metropolitan Planning Organization by the governor of Ohio and its members are responsible for transportation planning in Greene, Miami and Montgomery Counties. MVRPC delegates transportation issues to the Transportation Committee, which is served by two advisory committees: The Transportation Technical Advisory Committee the ̄ ,cil c ̄ zens

In its position as the area's planner for metropolitan transportation. MVRPC, through its Transportation Committee. develops plans that ensure. the continued success of this region — plans that enhance this area's competitive position, promote integration of systems. stimulate the economy, improve your own personal mobility, and preserve our environment. Two of these plans are outlined below:

* **The Long Range Transportation Plan**
  A 20-year capital improvement program of transportation facilities that ensures the wise investment of public funds.

* **The Transportation Improvement Program**
  A four-year capital improvement program of highway, bikeway and transit projects that ensures coordination between the urban transportation planning process and projects utilizing federal funds. It also guides implementation of the Long Range Transportation Plan in logical stages.

With the future of our community in mind, MVRPC also coordinates the planning and design of transportation systems and infrastructures and provides the following services,

- Assistance to members regarding traffic flow. roadway capacity and safety problems;
- Census and economic calculations for local jurisdictions and the general public;
- Coordination in the state and federal highway project development process to accelerate the completion date of these projects.

Air Quality Planning
Protecting and enhancing our quality of life...

Guided by the Clean Air Act amendments of 1990. MVRPC members take the lead in air quality planning for Clark. Greene, Miami and Montgomery counties by developing our area's portion of the State Implementation Plan for air quality attainment. The Regional Ozone Action Program is one part of our local plan. By encouraging residents to carpool or take the bus and reduce the use of gasoline-powered equipmenl during days when high levels of ozone [smog) are likely, we all can breathe a little easier.

For residents who need help forming a carpool, MVRPC offers the RIDESHARE program. RIDESHARE provides a free computer matching service that links commuters interested in carpooling or vanpooling. What a great way for you to save money on commuting costs - not to mention reduce air pollution, gasoline consumption, and traffic congestion. Call 223-SAVE or 1-800-743-SAVE for more information.

Other Activities
New Directions for Transportation

MVRPC plans for the special transportation needs of the elderly or disabled. helping them get to the grocery store or a doctor's appointment MVRPC's Human Service Transportation Committee recommends allocations that are used to purchase special vehicles for transporting senior citizens and those with disabilities. This committee also provides a forum to coordinate these special transportation needs.

MVRPC also takes steps to preserve the corridors left by abandoned railroads, contributing to the development of a statewide rails-to-trails network. The agency has been involved in developing plans for a brand new rail system, too - the long talked-about high-speed train that would connect Cincinnati, Dayton-Springfield, Columbus and Cleveland.
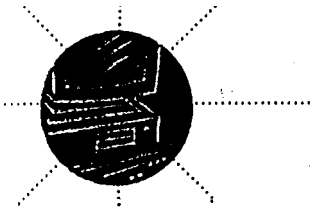
RESOURCE CENTER
Serving you with information...

Do you need help in locating or planning your business? What are the demographics of an area you're interested in targeting?
MVRPC's Resource Center is a planning library with both printed materials and computerized data that is available to the public at no charge. The

containing statistics dating back to the 1950s.

- The Federal Register
- Flood Plain Maps
- Ohio Administrative Code
- Ohio Revised Code
- Transportation Research Board Reports
- Ohio Bureau of Employment Services Reports
- Various Directories and Government Publications
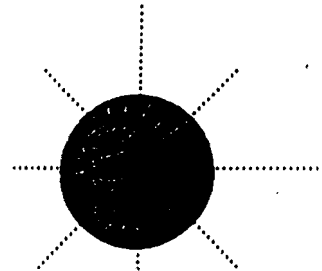
CRIMINAL/JUVENILE JUSTICE
Making a difference for our communities and our-youth...

- Reducing Violent Crimes Committed by Youth
- Developing Rehabilitation Services for Offenders
- Preventing Adult Crimes
- Providing Services to Law Enforcement Agencies and Courts

MVRPC administers the federal funds for progressive local programs committed to achieving these goals. In its capacity as the Local Criminal Justice Coordinating Council for the State Office of Criminal Justice Services, MVRPC provides support and technical assistance

to agencies in Montgomery County applying for the following federal block grant programs:

- The Juvenile Justice and Delinquency Prevention Act
- The Byrne Memorial State and Local Law Enforcement Assistance Program
- STOP Violence Against Women

To administer the funds, MVRPC staffs the Juvenile Justice Advisory Committee and Criminal Justice Policy Board – local bodies that review applications for funding under these block grant programs. MVRPC also plays a major role in the review process by sitting on the Montgomery County Criminal Justice Council In addition, MVRPC representatives sit on state commit tees that address criminal and juvenile justice issues and work with staff members from the S&ate Office of Criminal Justice Services on various state-wide initiatives.

By managing this grant process, MVRPC helps direct assistance into the most beneficial programs, to keep the system on a course of positive action – a course that benefits everyone in our community – young and old.

MVRPC
Miami Valley Regional Planning Commission

nsportation Equity Act
the 21st Century (TEA-21)

ᵖC's work within the Miami Valley is on course with
key strategies outlined by the new Transportation
Equity Act for the 21st Century (TEA-21). The
TEA-21 bill, signed by the President in June 1998,
works toward leading a stronger, safer, more
balanced America into the 21st century.

TEA-21 provides for:

- Significant increases in transportation funding
  levels for Ohio — 36% over the next six years.
- Improved safety through programs to increase
  seat belt use, reduce crashes at highway-rail
  crossings, remove unsafe trucks from the
  road, prevent pipeline explosions and toughen
  drunk driving standards.
- A cleaner environment through programs to
  help communities clean the air as well as
  implement new technologies to improve the
  quality of life.
- Expanded opportunities through the new
  Access to Jobs program, helping people make
  the transition from welfare to work.
- A balanced approach, by investing not only in
  highways and bridges, but also in transit
  systems, intermodal projects and advanced
  technologies such as Intelligent Transportation
  Systems (ITS).

Transportation Division

MVRPC is responsible for developing, implementing, monitoring
and updating a variety of transportation plans that are all
designed to:

- Enhance the Miami Valley's
  competitive position
- Promote regional growth
- Improve personal mobility
. Preserve the environment

Cooperation among communities is evident
when reviewing recent regional transponation
improvements. While MVRPC's transportation planning
program centers on Greene, Miami and Montgomery
Counties, cooperative efforts also extend into regions
across Ohio. This is evident in the review of 1998's work,
presented in the pages which follow.

'early Comparison of Regional lighway Capital Expenditures

II highway, bikeway and transit projects that use federal funds appear in MVRPC's Regional Four-Year Transportation Improvement Program (TIP) and must also be consistent with MVRPC's Long Range Transportation Plan.

■ Federal-Aid Highway Funds
■ State Funds
■ Local Funds

1995
- $9,313,792
- $3,999,941
- $27,621,714

1996
- $62,883,943
- $29,719,503
- $52,574,186

1997 Est.
- $24,934,731
- $53,281,500
- $45,098,644

1998 Est.
- $13,460,086
- $28,733,942
- $30,175,800
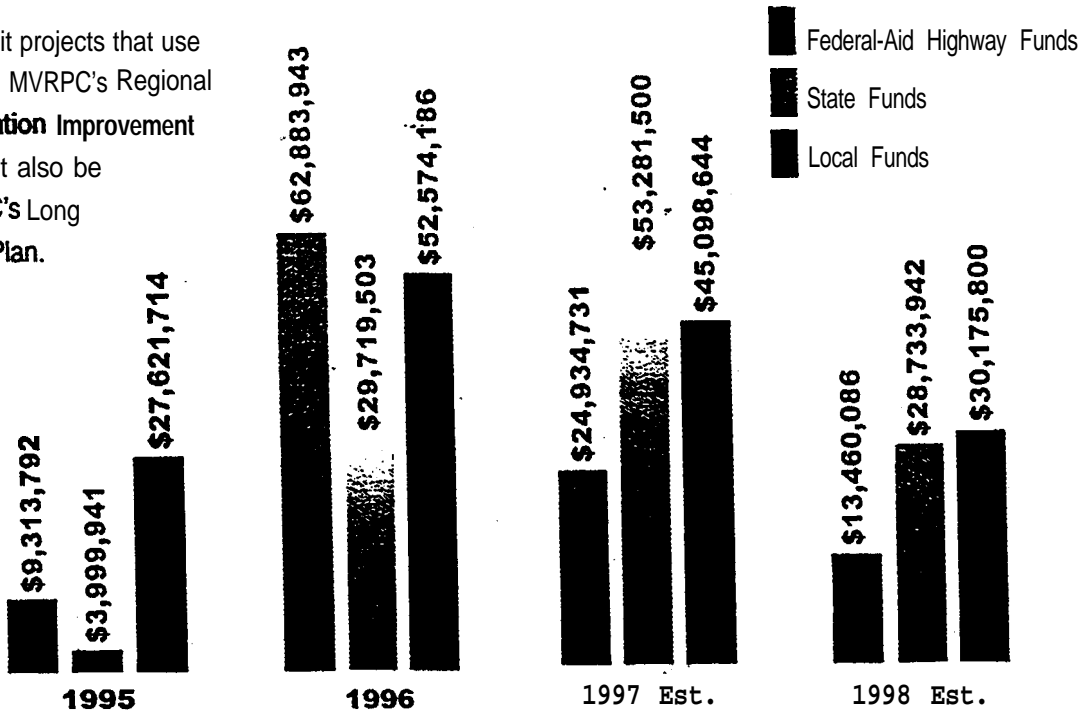
Funding for MVRPC's Transportation Planning

The two primary sources of funds for transportation planning at MVRPC are the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). These funds are matched by state resources and local dollars from the per capita assessment paid annually by MVRPC's members. Other revenue sources include grants and contracts for special projects and studies. Thii chart represents the funding sources and percentages for State Fiscal Year 1998 (July 1, 1997 - June 30, 1998).

Transportation Funding
$1,519,045

- 1.8% Local Contracts
- 6.7% Local Matching
- 11.8% FHWA - RIDESHARE
- 13.5% FHWA - STP'
- 14.1% FHWA - CM/AQ**
- 52.0% FHWA/FTA/ODOT Planning

'STP - Surface Transportation Program
**CM/AQ - Congestion Mitigation/Air Quality
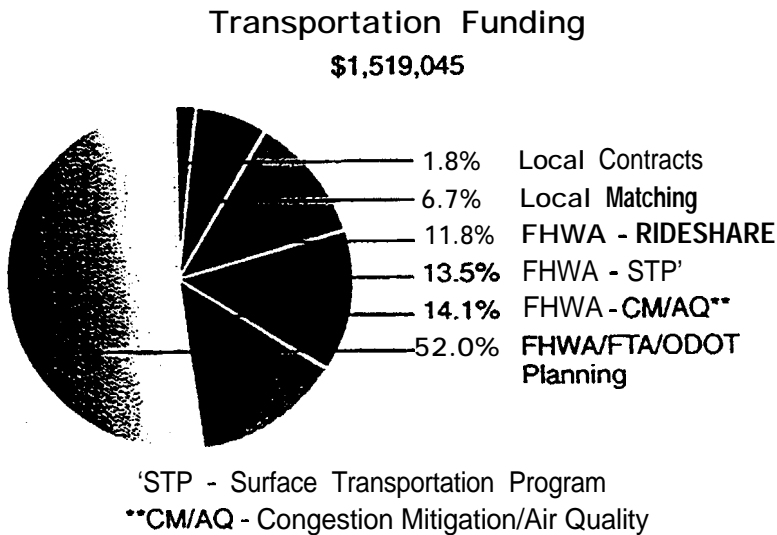
REGIONAL AIR POLLUTION CONTROL AGENCY

or

1997 Total Pollen

Moving 7-Day Average Total Pollen
D.E.N.T.S, Centerville, 1997

grains per cubic meter

350

300

250

200

150

100

50
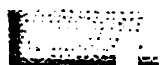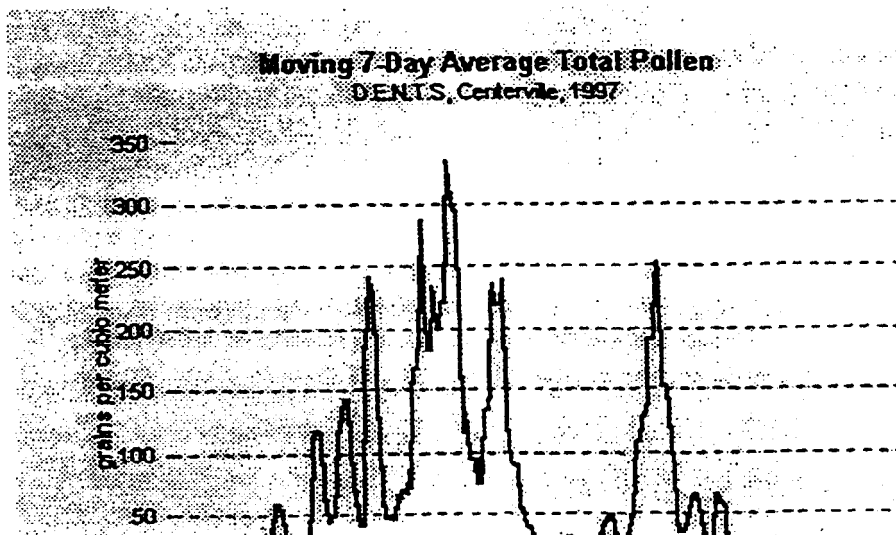
1997 Total Pollen by Group

Moving 7-Day Average Pollen, by Type
D.E.N.T.S. Centerville, 1997

(Chart: grains per cubic meter vs. Month. Y-axis values: 0, 50, 100, 150, 200, 250, 300, 350. X-axis values: 1 through 12. Series labeled: Trees, Grass, Ragweed, Other Weeds.)
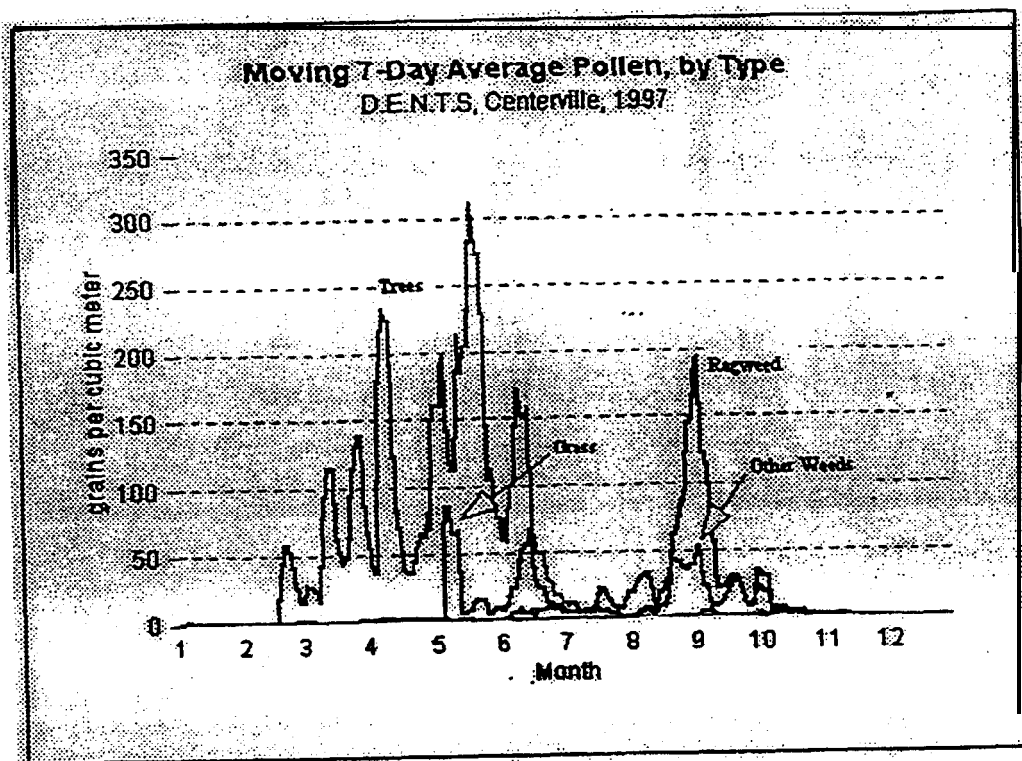
Annual Worst Day's Mold, by Year

Annual Highest Daily Total Mold
at D.E.N.T.S, Centerville, OH
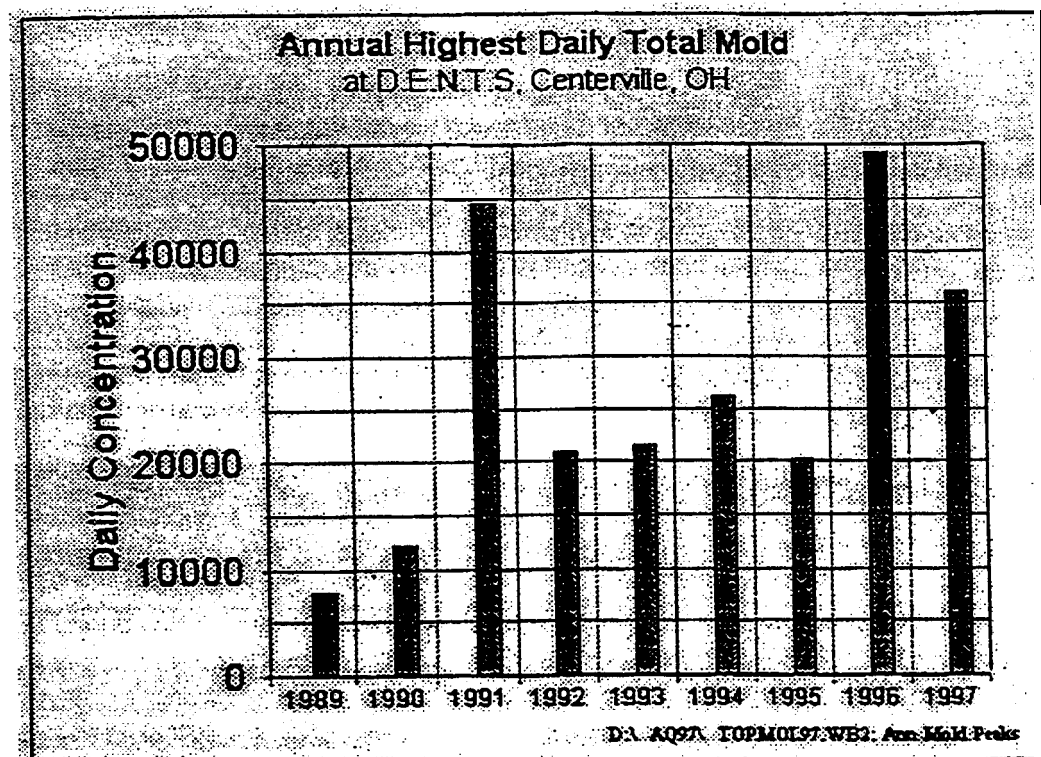
Annual Total Mold, by Year

Annual Total Mold
at D.E.N.T.S, Centerville, OH
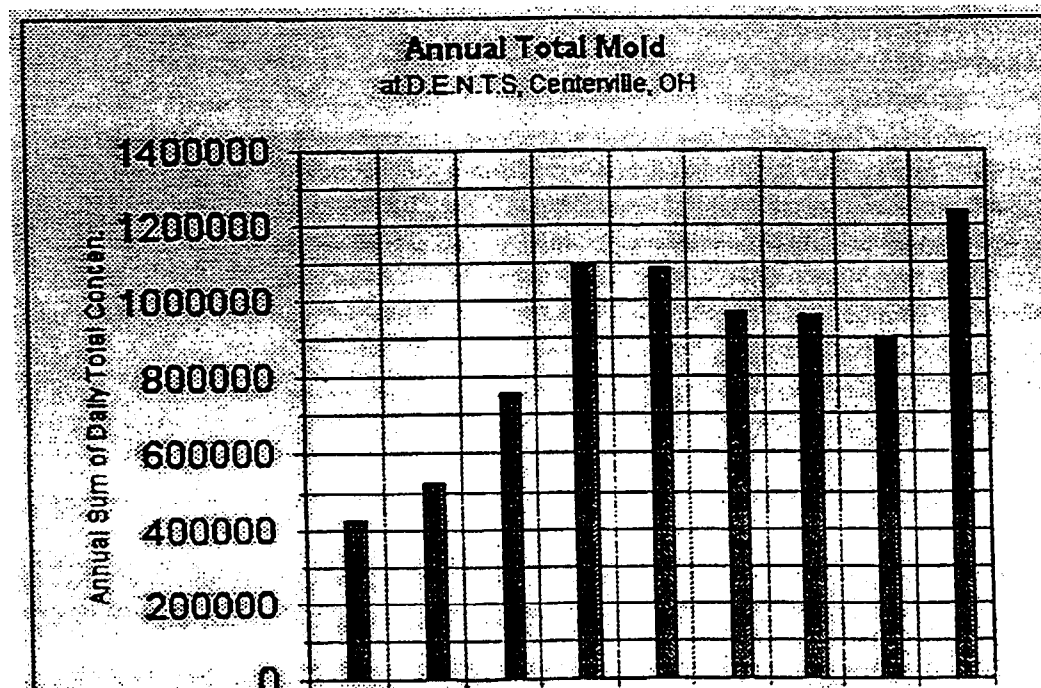
RAPCA Monitoring Sites

Format:

RAPCA Site# Address, City AIRS-SITE ID * 'PARAMETER-CODE * POC PARAMETER-NAME * COUNTY * Site-Type * PSIUTM Zone * Easting (meters) * Northing (meters)

1997 Sites Reported to AIRS

Site 616

5171 Urbana Road, Springfield 390230001 * 44201 * 1 * OZONE * CLARK * NAMS 17 * 4431438 * 260594

Site 611

5400 Spangler Road, Enon 390230003 * 42401 * 1 * SULFUR DIOXIDE * CLARK * SLAMS 390230003 * 44201 * 1 * OZONE * CLARK * NAMS 17 * 4415816 * 243568

Site 620

3 14 Dayton Street, Yellow Springs 390570005 * 81102 * 1 * PM10 * GREENE * Spm 17 * 4410242 * 252850

Site 619

3825 N.State Rt.589, Casstown 391090005 * 44201 * 1 * OZONE * MIAMI * SLAMS 16 * 4440923 * 745996

Site 4

7 East Fourth St, Dayton 391130003 * 42101 * 1 * CARBON MONOXIDE * MONTGOMERY * NAMS * PSI 16 * 4404499 * 740600

Site 13

E. Dorothy Lane & Wilmington Pk., Kettering 391130004 * 12128 * 1 * LEAD (TSP) * MONTGOMERY * NAMS

Site 15

756 McEwen Rd., Centerville 391130008 * 81102 * 1 * PM10 * MONTGOMERY * SLAMS 16 * 4391700 * 741490

Site l(w)

38 E. Monument St, Dayton 391'130014 * 81102 * 1 * PM10 * MONTGOMERY * NAMS 391130014 * 81102 * I * PM10 Anderson * MONTGOMERY * PSI 16 * 4405086 * 740552

Site 40

2100   Timberlane, Harrison Twp. 391130019 * 11101 * 2 * SUSPENDED PARTICULATE (TSP) * MONTGOMERY * NAMS 391130019 * 12128 * 2 * LEAD (TSP) * MONTGOMERY * NAMS 391130019 * 44201 * 1 * OZONE * MONTGOMERY * SLAMS * PSI'16 * 4410654 * 740115

Site 44

451 W. Third St, Dayton 391130025 * 42401 * 2 * SULFUR DIOXIDE * MONTGOMERY *

NAMS * PSI 16 * 4404497 * 739869

Site 10

901 W. Fairview, Dayton 391130028 * 42101 * 1 * CARBON MONOXIDE * MONTGOMERY * NAMS 16 * 4407613 * 737535

Site 8

2778 Viking Lane, Moraine 39 1137001 * 81102 * 1 * PM10 * MONTGOMERY * SLAMS 16 * 4399557 * 738473

Site 615

Oxford-Gettysburg Rd., New Paris 391351001 * 44201 * 1 * OZONE * PREBLE * SLAMS 16 * 4411768 * 695024

Site 6X

Ledbetter Rd, Xenia 390570006 * 44201 * 1 * OZONE * GREENE * SLAMS 17 * 4394624 *

247484

Pollution Standards Index Summary for 1997

The table below reflects the PSI values actually monitored in **RAPCA's** 6-county region in 1997. These values may vary somewhat from the PSI values as reported to the news media, because the official daily PSI (as reported) is based on an official subset of monitors designated as "PSI monitors." The values here, however, reflect every monitor in every county. Also the official daily PSI represents the region, whereas these values are tallied by the county in which they were monitored.

A PSI of O-50 is called "Good", 5 1-l 00 = "Moderate", 101-l 99 = "Unhealthful", ZOO-299 = "Very Unhealthful", and 300 and above = "Hazardous".

County	Highest PSI	Average PSI	# Good	# Moderate	# Unhealthful	#Very Unhealthful
Clark	97	34	255	108		
Greene	94	46	146	93		
Miami	93	46	135	77		
Montgomery	113	34	282	82	1	
Preble	94	48	136	78		

```
 (Darke is missing because it has no monitors.)
 Greene reflects Site 620 and Site 6X.
 Miami and Preble have only one monitor each, for ozone, only for April-October.
 Clark and Montgomery measure multiple pollutants at multiple sites.
```

Warning: you cannot meaningfully use the PSI to compare air quality among counties which have different numbers of sites measuring different pollutants!

The following table reflects the daily PSI values for the region

```
                  1997  POLLUTANT  STANDARD  INDEX  SUMMARY
                   AIR QUALITY  CONTROL REGION  173   : DAYTON
         JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
```

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	1	15	17	19	47	46	43	54	94	68	33	12	12
	2	17	28	19	47	34	43	79	59	72	33	11	14
	3	20	29	40	SS	46	33	55	70	36	61	10	18
	4	20	20	34	61	54	52	37	52	38	74	13	10
D	5	3	14	47	54	52	57	48	42	44	80	13	6
	6	11	10	33	57	49	52	60	52	66	68	21	14
A	7	12	23	9	43	52	47	72	63	61	62	21	5
	8	20	16	11	46	41	46	80	86	53	82	16	17
Y	9	18	19	13	47	34	61	46	65	42	52	12	15
	10	18	18	10	47	49	70	57	42	34	44	14	12
	11	8	10	18	49	59	62	84	56	38	43	10	14
0	12	17	16	11	54	45	55	94	52	45	65	20	20
	13	18	23	17	45	48	63	97	40	62	44	20	7
F	14	23	19	10	51	52	51	73	58	65	37	14	12
	15	25	27	12	57	45	68	64	49	72	32	10	51
	16	1s	14	8	44	46	60	67	66	70	27	8	so

M	17	8	14	23	30	59	56	84	44	48	27	18	28
	18	8	15	18	48	68	56	94	45	52	37	38	59
O	19	20	18	13	53	57	65	52	41	72	46	52	50
	20	20	21	13	53	47	75	77	33	52	35	22	20
N	21	20	16	22	52	42	71	92	43	37	34	22	10
	22	22	10	6	51	46	64	61	34	45	33	10	13
T	23	21	11	11	51	53	87	63	42	33	28	6	13
	24	18	13	12	46	85	113	59	47	34	18	22	15
H	25	11	19	10	46	57	87	69	57	47	26	27	8
	26	13	18	9	54	47	56	84	68	46	25	22	5
	27	10	12	17	38	52	85	73	65	46	31	12	3
	28	15	21	9	52	52	76	60	52	69	27	25	8
	29	26		28	56	33	61	38	40	40	35	17	17
	30	40		8	64	36	54	57	44	32	44	25	22
	31	38		12		45		77	66		36		16

COUNTS BY RANGES:

	GOOD	MODERATE	UNHEALTHFUL	VERY UNHEALTHFUL
NO. OF DAYS:	< OR = 50	51-100	101-199	200-299
	243	121	1	0

TOTAL DAYS WITH PSX VALUE = 365

HIGHEST VALUES:

	1ST	2ND	3RD	4TH	5TH	6TH
HIGHEST PSI/YR	113	97	94	9 4	94	92
DATE OCCURRED	06/24	07/13	07/12	07/18	08/01	7/21

PERCENTILES :

10TH %	25TH %	5oTH %	75TH %	90TH %
011	018	040	054	068

AVERAGE PSI = 39

CONTROLLING POLLUTANT:
DAYS CO = 76   DAYS 03 = 209   DAYS SO2 = 57   DAYS NO2 = 0
DAYS PM-10 = 23

Ozone Site 40, 2 100 Timberlane, Harrison Township, PSI Site

(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > .125 PPM	Days With Readings Greater > .125 PPM	Capture Rate Month-Quarter %
January	*				
February	*		...		
March	*				
April	713	.069	0	0	99 - 99
May	739	.091	0	0	99 - 99
June	717	.130	0	0	99 - 99
July	738	.096	0	0	99 - 99
August	742	.097	0	0	99 - 99
September	717	.082	0	0	99 - 99
October	741	.091	0	0	99 - 99
November	*				
December	*				
TOTALS					
1997		.130	0	0	99
1996	5031	.117	0	0	" " 98
1995	5111	.115	0	0	100
1994	5072	.118	0	0	99
1993	5094	.125	0	0	93

Highest Day: June 24 - .130
Second Highest Day: August 1 - .097
* Did not operate

Ozone Site 615, Preble County

(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > .125 PPM	Days With Readings Greater > .125 PPM	Capture Rate Month-Quarter %
January	*				
February	*		...		
March	*				
April	714	.069	0	0	99-99
May	741	.082	0	0	99-99
June	717	.091	0	0	99-99
July	698	.113	0	0	94-94
August	742	.103	0	0	99-97
September	716	.084	0	0	99-98
October	642	.085	0	0	99-99
November	*				
December	*				
TOTALS					
1997	5070	.113	0	0	99
1996	4904	.121	0	0	95
1995	5021	.110	0	0	98
1994	5098	.102	0	0	99
1993	5089	.103	0	0	97

Highest Day: July 18 - .113
Second Highest Day: August 8 - .103
* Did not operate

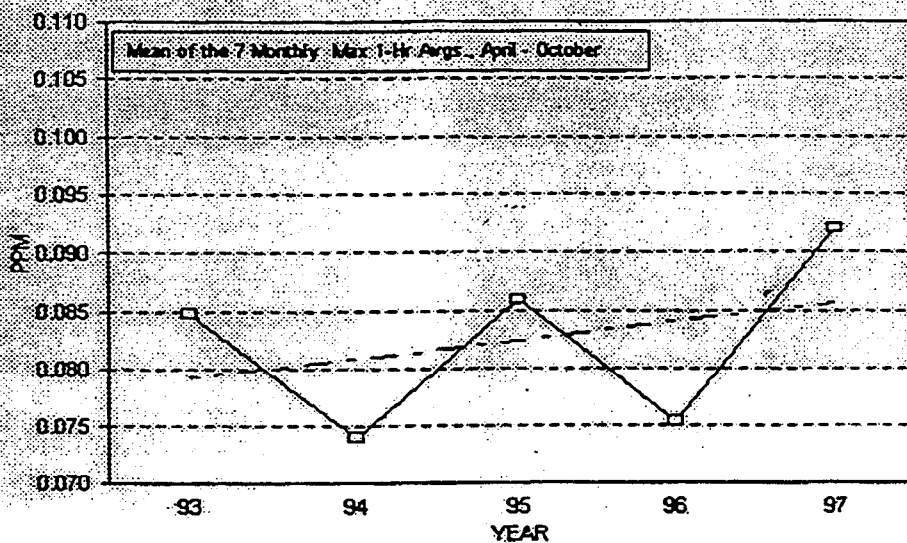# Ozone Site 6 16, 5 17 1 Urbana, Rd., Springfield
(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours >/= .125 PPM	Days With Readings Greater > .125 PPM	Capture Rate Month-Quarter %
January	*				
February	*		...		
March	*				
April	715	.076	0	0	98 - 99
May	740	.101	0	0	99 - 99
June	714	.108	0	0	99 - 99
July	724	.117	0	0	97 - 97
August	733	.103	0	0	98 - 98
September	715	.083	0	0	99 - 98
October	741	.099	0	0	99 - 99
November	*				
December	*				
TOTALS					
1997	5086	117	0	0	99
1996	5080	.125	1	0	99
1995	4916	.126	0	1	96
1994	5048	.125	1	0	98
1993	5027	.122	0	0	98
1992	5073	.094	0	0	99

Highest Day: July 13 - ,117
Second Highest Day: July **21 -** ,111
* **Did not operate**

OZONE SITE-619, Miami Co.
5-Year Trend for 1997

Mean of the 7 Monthly Max 1-Hr Avgs .. April - October

The average of the daily ozone maxima during the ozone season was computed for each site for each of the last 10 years.

Seasonal Means of the Daily Maxima
Ozone, 1997

Dayton-40

Enon-611

Preble-615

Springfield-616

Miami-619

Xenia-6X
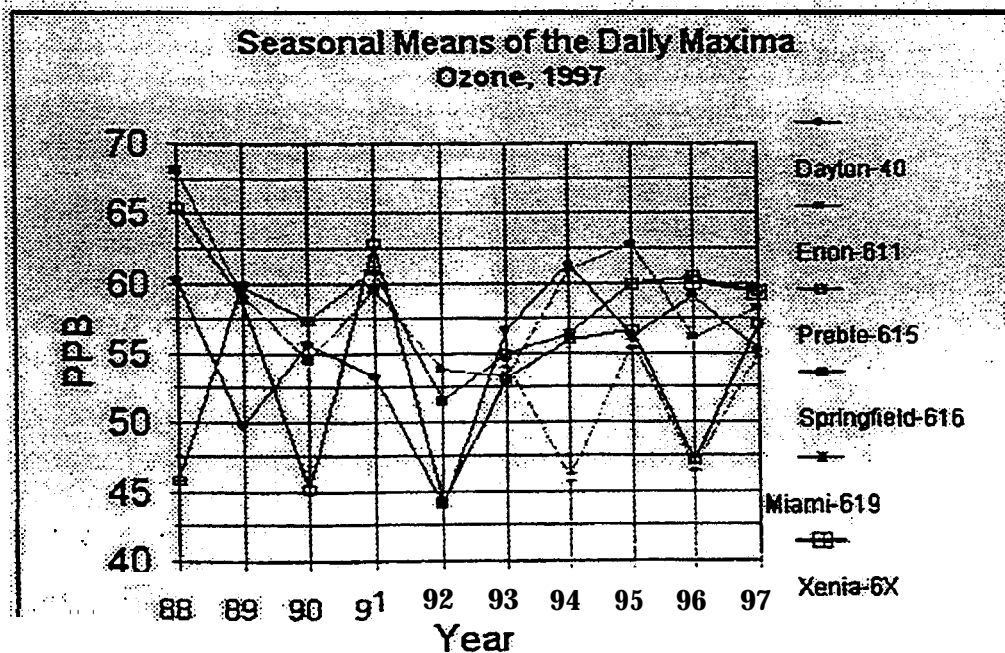
Site 6 15 Ozone Trend

OZONE SITE-615, Preble Co.
10-Yr. Trend for 1997

Mean of the 7 Monthly Max. 1-Hr Avgs., April - October.
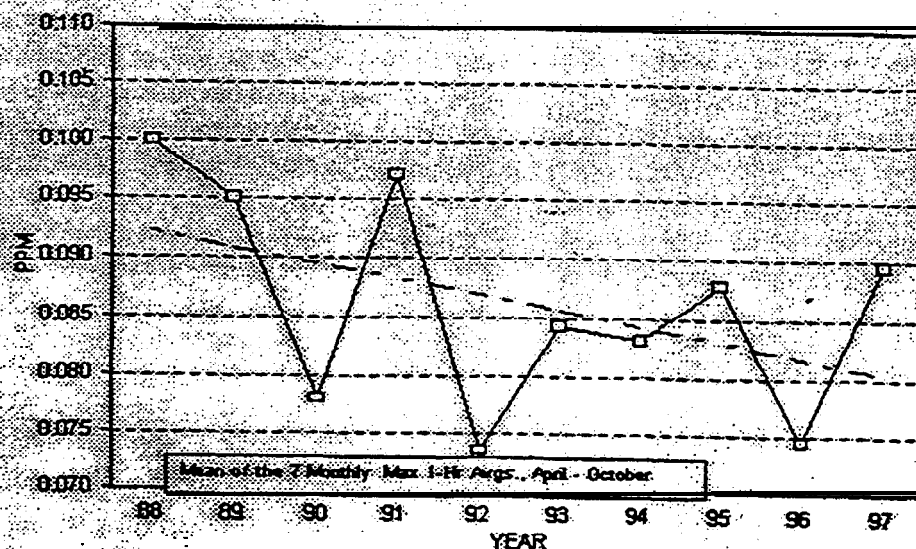
Site 616 Ozone Tread

OZONE SITE-616, Springfield
10-Yr. Trend for 1997

Mean of the 7 Monthly Max 1-Hr Avgs., April - October

Site 40 Ozone Trend

OZONE SITE-40, Dayton
10-Yr. Trend for 1997

Mean of the 7 Monthly Max 1-Hr Avgs., April - October

PPM vs YEAR (88 to 97)
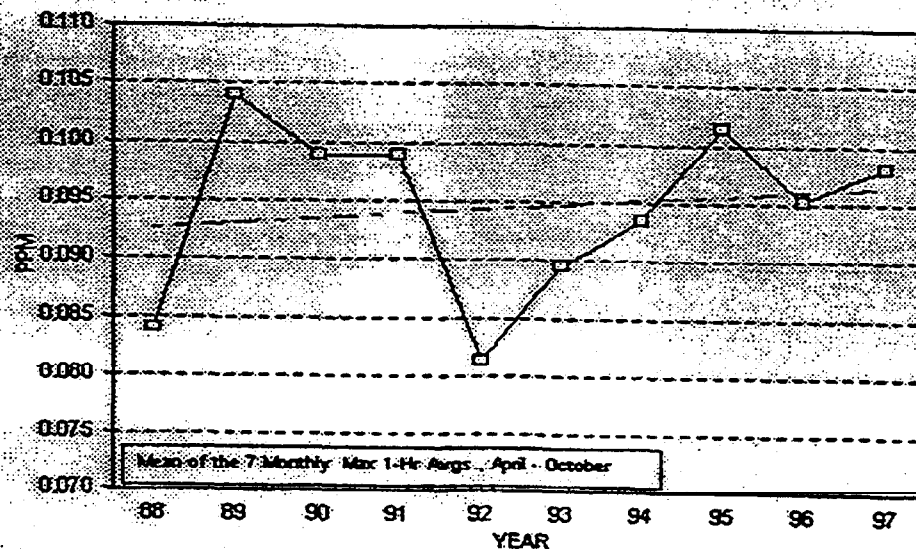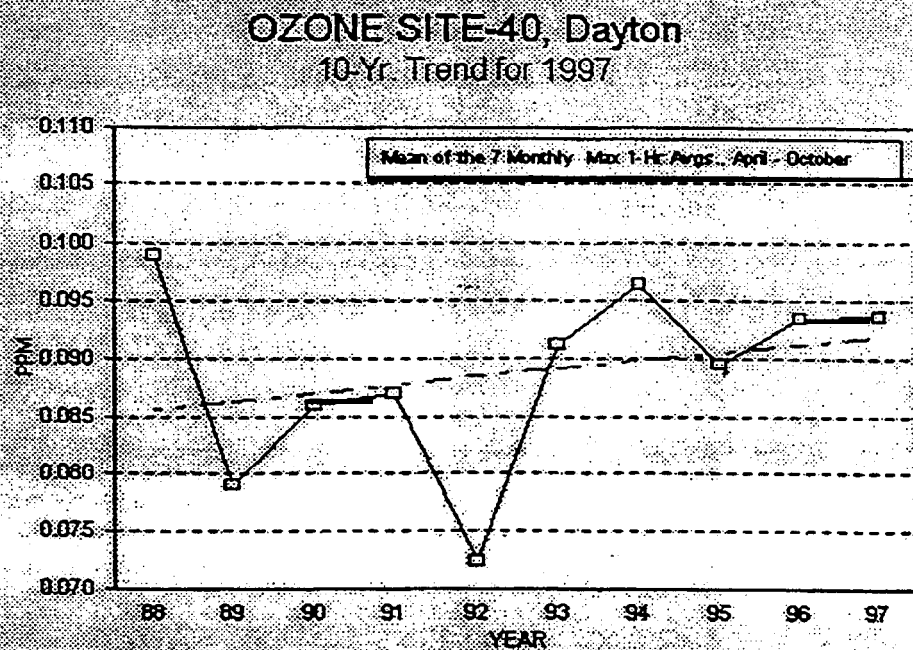
Site 611 Ozone Trend

OZONE SITE-611, Enon
10-Yr. Trend for 1997

Mean of the 7 Monthly Max 1-Hr Avgs., April - October

PPM vs YEAR (88 to 97)
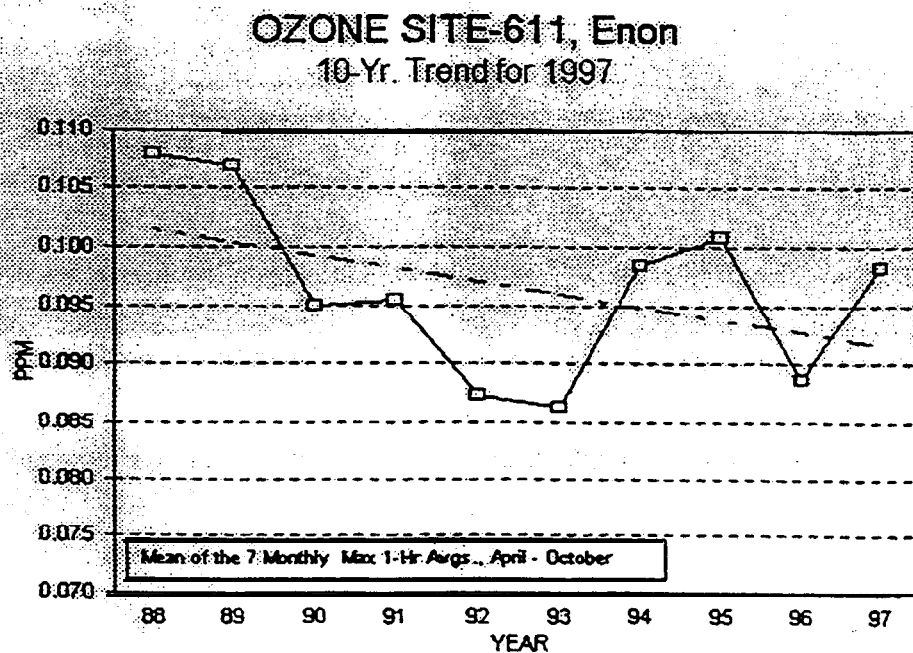
Ozone Site 6 19, 3825 N. State Route 589, Casstown
(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > .125 PPM	Days With Readings Greater > .125 PPM	Capture Rate Month-Quarter %
January	*		...		
February	*				
March	*			.	
April	710	.072	0	0	99-99
May	740	.094	0	0	99-99
June	718	.112	0	0	99-97
July	740	.099		0	gg-gg
August	742	.093	0	0	gg-gg
September	715	.083	0	0	89-89
October	663	.091	0	0	99-99
November	*				
December	*				
TOTALS					
1997	112	.112	0	0	98
1996	5060	.117	0	0	99
1995	5115	.118	0	0	100
1994	5097	.099	0	0	99
Highest Day: July 24	468	.109 ,112	0	0	91

Second Highest Day: July 23 - .104
 * Did not operate

Ozone Site 6X, 541 Ledbetter Road, Xenia

(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > .125 PPM	Days With Readings Greater > .125 PPM	Capture Rate Month-Quarter %
January	*				
February	*				
March	*				
April	717	.075	0	0	99-99
May	741	.102	0	0	99 - 99
June	715	.105	0	0	99-99
July	735	.111	0	0	99-99
August	741	.113	0	0	99 - 99
September	718	.087	0	0	99 - 99
October	740	.096	0	0	99-99
November	*				
December	*				
TOTALS					
1997	5107	.113	0	0	99
1996 **	3442	.105	0	0	99

Highest Day: August 1 - .113
Second Highest Day: July 13 - .111
* Did not operate
** Less than full season

CO Site 4, East Fourth Street, Dayton, PSI Site
(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > 35 PPM	Maximum 8 - Hour Readings PPM	8 - Hour Periods Greater > 9 PPM	Capture Rate Month-Quarter %
January	740	5.7	0.	2.3	0	99 - 99
February	667	4.1	0	2.4	0	99 - 99
March	694	5.0	0	4.2	0	93 - 97
April	706	4.0	0	2.4	0	98 - 98
May	742	2.6	0	1.6	0	99 - 99
June	612	3.0	0	2.2	0	85 - 94
July	740	1.8	0	1.3	0	99 - 99
August	740	2.8	0	1.8	0	99 - 99
September	718	3.4	0	1.6	0	99 - 99
October	741	6.4	0	4.0	0	99 - 99
November	717	2.9	0	1.9	0	99 - 99
December	740	3.9	0	2.7	0	99 - 99
TOTALS						
1997	8557	6.4	0	4.2	0	98
1996	8520	5.1	0	3.0	0	97
1995	8583	6.7	0	4.1	0	98
1994	8334	11.7	0	6.2	0	95
1993	8540	6.9	0	4.7	0	97
1992	8700	11.6	0	7.0	0	99

1 - Hour Highest Day: October 30 - 6.4
1 - Hour Second Highest Day: January 14 - 5.7
8 - Hour Highest Day: March 5 - 4.2
8 - Hour Second Highest Day: October 30 - 4.0
* Did not operate

CO Site 10, 903 West Fairview Ave., Dayton

(Reported as: Parts Per Million)

Month	Total Hours	Maximum 1-Hour Readings PPM	Hours Greater > 35 PPM	Maximum 8 - Hour Readings PPM	8 - Hour Periods Greater > 9 PPM	Capture Rate Month-Quarter %
January	740	2.2	0	1.8	0	99 - 99
February	670	3.2	0	1.7	0	99 - 99
March	742	3.5	0	1.4	-0	99 - 99
April	714	2.4	0	1.3	0	99 - 99
May	742	2.6	0	1.0	0	99 - 99
June	715	2.2	0	1.0	0	99 - 99
July	740	1.7	0	0.8	0	99 - 99
August	742	2.8	0	1.0	0	99 - 99
September	716	2.1	0	1.3	0	99 - 99
October	742	3.7	0	1.8	0	99 - 99
November	717	2.6	0	1.9	0	99 - 99
December	741	2.4	0	1.8	0	99 - 99
TOTALS						
1997	8721	4.1	0	1.9	0	99
1996	8532	3.7	0	2.7	0	97
1995	8705	4.4	0	2.9	0	99
1994	8681	5.0	0	2.2	0	99
1993	8570	6.1	0	3.9	0	98

1 - Hour Highest Day: January 30 - 4.1
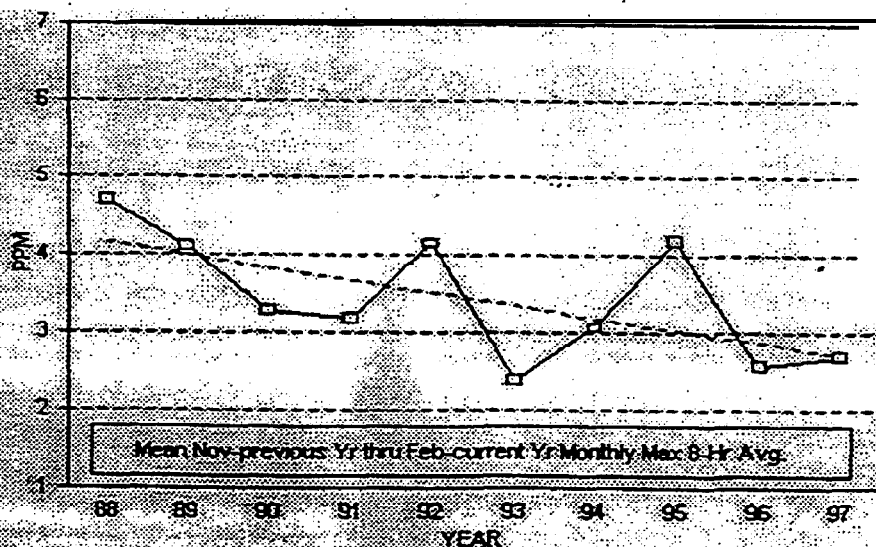**1 - Hour Second Highest Day: November 24 - 3.2**
8 - Hour Highest Day: November 21 - 1.9
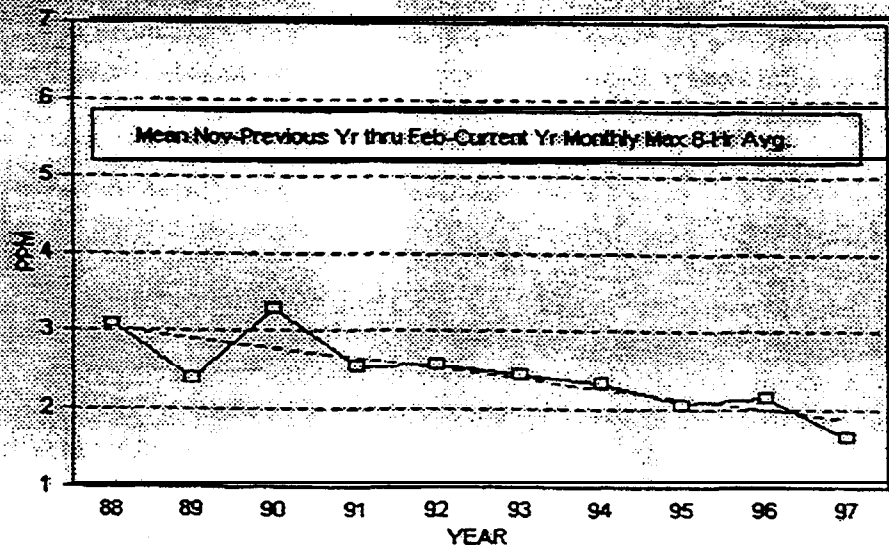**8 - Hour Second Highest Day: January 3 - 1.8**
* Did not operate

Site **4** Carbon Monoxide **Trend**

CO SITE-4, Dayton
10-Yr Trend for 1997

:Site 10 Carbon Monoxide Trend

CO SITE-10, Dayton
10-Yr Trend for 1997

T le 1997 Data

The state and federal primary standards for SO2 are an annual arithmetic mean of 0.03 parts per
m ,ion (ppm) and a maximum 24-hour concentration of 0.14 ppm, not to be exceeded more than
or..e per year. The secondary standard is a maximum three-hour concentration of 0.5 ppm, not to be
exceeded more than once per year. None of those standards were exceeded in 1997 at either of
R PCA's two monitoring sites. Below are the 1997 SO2 data tables for the following sites:
[Dayton - Site 44]   [Enon - Site 6111]

Multi-year trends are shown for the following sites although neither is statistically significant not
even at 10%. [Dayton- Site 44   [Enon - Site 61 1]

SO2 Site 44,451 West Third St., Dayton, PSI Site
(Reported as: Parts Per Million)

Month	Total Hours	Max 3-Hour Readings PPM	Max 24-Hour Readings PPM	3-Hour Periods Greater> .5 PPM	24-Hour Periods Greater> .14 PPM	Monthly Hourly Avg. PPM	Capture Rate Month-Quarter %
January	741	.045	.024	0	0	.007	99 - 99
F-bruary	671	.028	.011	0	0	.005	99 - 99
larch	741	.020	.014	0	0	.004	99 - 99
April	718	.042	.019	0	0	.004	99 - 99
May	740	.018	.007	0	0	.003	99 - 99
June	713	.026	.013	0	0	.006	99 - 99
July	738	.038	.015	0	0	.005	99 - 99
August	742	.024	.009	0	0	.005	99 - 99
S(tembei	717	.025	.016	0	0	.006	99 - 99
Gctober	742	.040	.022	0	0	.010	99 - 99
N-vembei	718	.050	.034	0	0	.009	99 - 99
D cembei	690	.091	.032	0	0	.008	93 - 97
TOTALS							
997	8671	.091	.034	0	0	.006	
1996	8677	.055	.023	0	0	.004	
995	8579	.029	.018	0	0	.004	
1994	8692	.063	.041	0	0	.006	
993	8455	.068	.038	0	0	.006	

- Hour Highest Day: December 15 - .091
- Hour Second Highest Day: December 18 - .065
4   Hour Highest Day: November 19 - .034
4 - Hour Second Highest Day: December 15 - .032
D:d not operate

SO2 Site 611, 5400 Spangler Rd., Enon
(Reported as: Parts Per Million)

Month	Total Hours	Max 3-Hour Readings PPM	Max 24-Hour Readings PPM	3-Hour Periods Greater> .5 PPM	24-Hour Periods Greater> .14 PPM	Monthly Hourly Avg. PPM	Capture Rate Month-Quarter %
January	712	.041	.021	0	0	.075	96 - 96
February	670	.023	.011	0	0	.048	99 - 98
March	740	.026	.012	0	0	.048	99 - 98
April	718	.024	.010	0	0	.036	99 - 99
May	741	.019	.010	0	0	.037	99 - 99
June	715	.015	.007	0	0	.033	99 - 99
July	741	.031	.010	0	0	.042	99 - 99
August	717	.018	.007	0	0	.003	96 - 97
September	715	.058	.022	0	0	.005	99 - 98
October	740	.039	.012	0	0	.005	99 - 99
November	718	.036	.018	0	0	.005	99 - 99
December	741	.044	.027	0	0	.007	99 - 99
TOTALS							
1997	8668	.058	.027	0	0	.005	ʻɔˈ
1996	8620	.108	.031	0	0	.005	
1995	8574	.039	.024	0	0	.004	
1994	8718	.111	.055	0	0	.007	
1993	8660	.065	.030	0	0	.006	

3 - Hour Highest Day: September 1 - .058
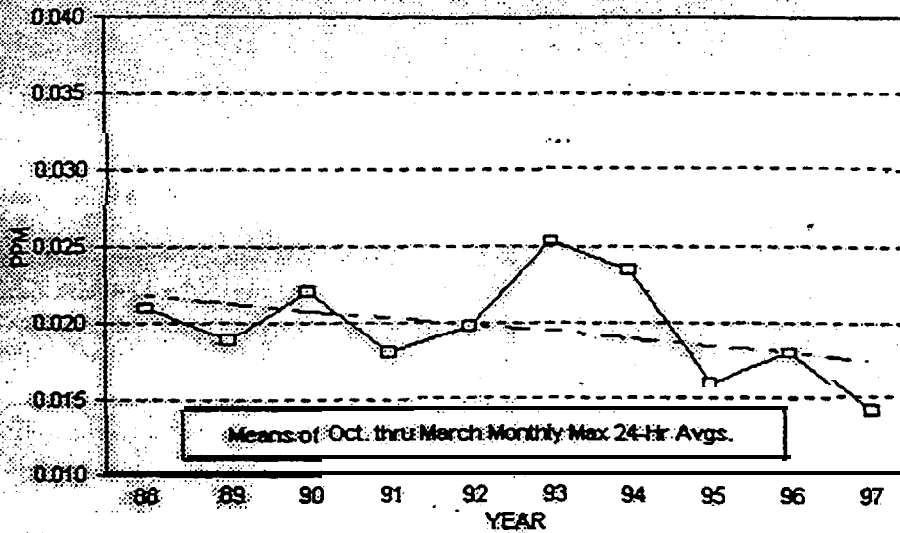3 - Hour Second Highest Day: December 19 - .044
24.- Hour Highest Day: December 19 - ,027
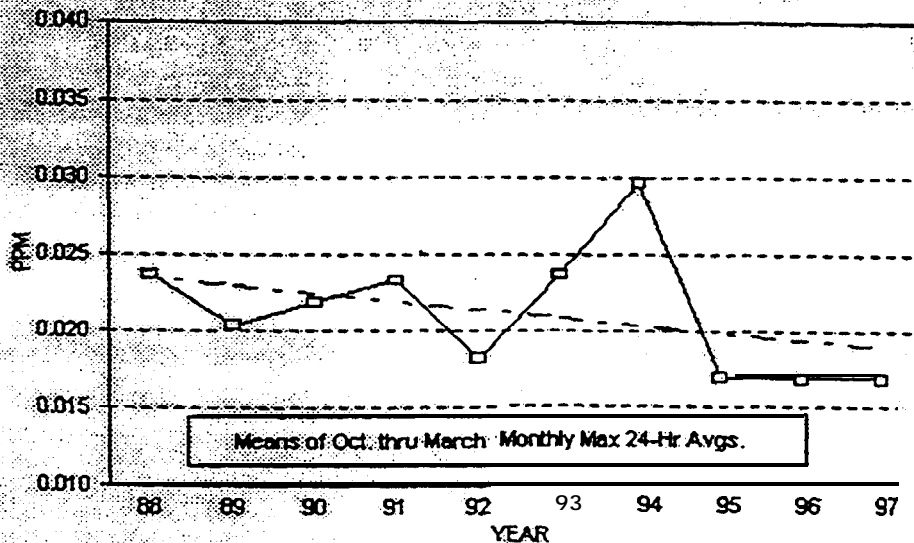24 - Hour Second Highest Day: September 1- .022
* Did not operate

Site 44 Sulfur Dioxide Trend

SO2 SITE-44, Dayton
10-Yr. Trend for 1997

Means of Oct. thru March Monthly Max 24-Hr Avgs.

'Site 611 Sulfur Dioxide Trend

SO2 SITE-611
10-Yr. Trend for 1997

Means of Oct. thru March Monthly Max 24-Hr Avgs.

PM-10 Site. 1, 38 East Monument Street, Dayton, PSI Site
(Reported as: Micrograms per cubic meter of air)

Date of Month	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	31			12	34		35	19		26	10	
2	31			12	18		27	27	54	26		8
3	27	40	19		23	25	25		64	19		17
4		25	25	25		31	16		47	7	27	
5		15	29	23		17	14	57	61		17	20
6	12	16	24			16		55	42		31	16
7	15	21	15		22	25		74		24	26	
8	15			22	31		36	64		37	13	
9	20			17	26		20	40	49	24		11
10	16	21	23	11	34	16	12		37	13		17
11		28	13	25		18	16		33	16	7	27
12		26	18	38		25	28	28	28		11	22
13	13	23	19		12	34		47	17		16	16
14	27	22	19		17	37		38		31	30	
15	47			26	19		22	55		32	15	
16	22			18	33		24	43	14	52		15
17	20	15	13	17	59	38	35		21	56		19
18		20	28	23		54	29		14	27	14	18
19		24	18	26		46	25	46	17		23	19
20	21	*	20		31	40		68	20		25	17
21	38	30	36		30	24		79		18	17	
22	21			13	24		23	49		25	14	
23	20			17			35	79	18	23		13
24	20	18	11	10	44	32	31		18	10		13
25		19	12	29		29	29		17	23	30	10
26		37	25	19		20	20	32	15		8	14
27	19	20	15		35	27		68	28		8	20
28	14	18	16		33	41		57		21		
29	18			20	28		29	58		21		
30	29			11	24		44	40	19	18		29
31	39		15		16		26			16		36

Sampling is conducted Monday though Friday, no Weekends or Holidays

PM-10 Site 1W, 38 E. Monument St., Dayton
(Reported as: Micrograms per cubic meter of air)

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
20	19	26	34	17	22	*	37	*	63	20	14
18	27	17	21	11	25	*	20	30	28	19	20
15	16	17	28	17	42	*	20	47	27	37	67
22	12	10	33	10	26	*	52	27	23	22	14
15		26	24	28	*	48	45	14	22	25	22
27				26							

'97 Arithmetic Mean = 25
Sampling is conducted every six days; 1997 sampling began January 1.
* Did not operate

PM-10 Site 8, 2728 Viking Lane, Moraine
(Reported as: Micrograms per cubic meter of air)

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
19	19	28	33	13	32	21	37	25	60	21	11
16	2 5	18	22	7	22	19	21	26	29	20	17
7	14	19	26	14	39	42	16	40	29	30	50
13	11	11	35	13	25	40	46	25	26	22	15
15		24	15	29	20	46	43	13	22	22	18
29				28							

'96 Arithmetic Mean = 23
Sampling is conducted every six days; 1996 sampling began January 4.
* Did not operate

PM-10 Site 15, 7056 McEwen Rd., Centerville
(Reported as: Micrograms per cubic meter of air)

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
15	18	19	21	13	19	20	32	25	48	15	10
13	24	14	17	8	20	22	16	21	24	18	13
11	10	15	21	12	38	37	13	34	23	22	38
11	9	11	31	9	22	41	41	15	21	17	10
11		22	20	24	20	47	44	10	18	20	17
24				16							

'97 Arithmetic Mean = 20
Sampling is conducted every six days; 1997 sampling-began January 1.
* Did not operate

PM-10 Site 620, 3 14 Dayton Street, Yellow Springs
(Reported as: Micrograms per cubic meter of air)

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
16	18	19	21	11	19	19	51	26	*	17	11
15	26	14	19	7	21	25	19	17	25	15	13
13	14	15	22	10	36	37	17	29	26	16	30
12	10	9	35	11	22	40	3	8	15	21	107
11		28	20	23	22	-45	-3		6	23	
25					14						

1997 Arithmetic Mean =
Sampling is conducted **every** six days; 1997 sampling began July 14.
* Did not operate

TSP Site 40, Timberlane Rd., Dayton, Ohio
(Reported as: Micrograms per cubic meter of air)

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
26	27	41	65	27	43	30	65	46	89	36	20
40	37	31	53	19	41	37	68	36	54	30	19
31	24	34	*	47	54	62	22	65	44	56	68
18	18	21	65	37	52	56	64	41	35	38	15
24		41	51	65	50	57	50	28	40	27	23
39				32							

1997 Average: 4 1
Sampling is **conducted** every six days; 1997 sampling began January 1.
* Did not operate

Site 1 PM 10 Trend

PM-10 SITE-1W, Dayton
9-Yr. Trend for 1997

Annual Arithmetic Means

YEAR
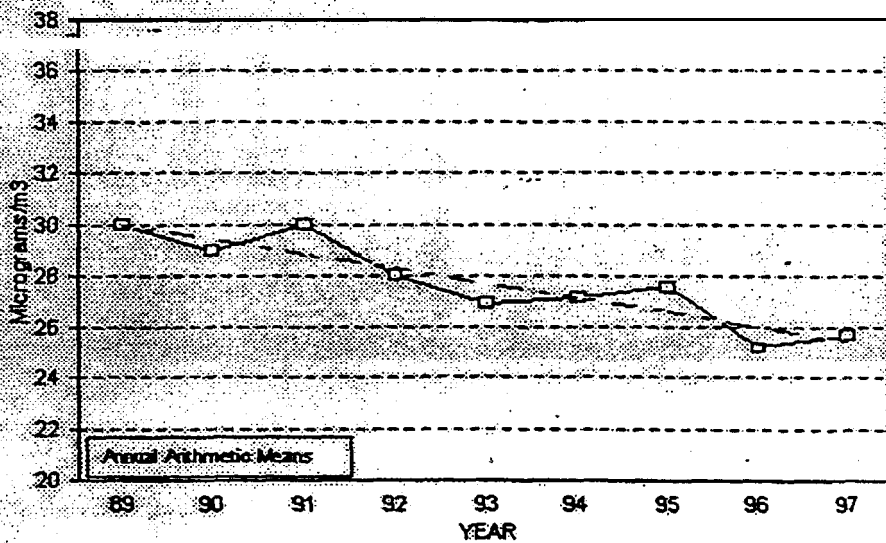
Site 8 PM10 Trend

PM-10 SITE-8, Moraine
10-Yr. Trend for 1997

Annual Arithmetic Means

YEAR
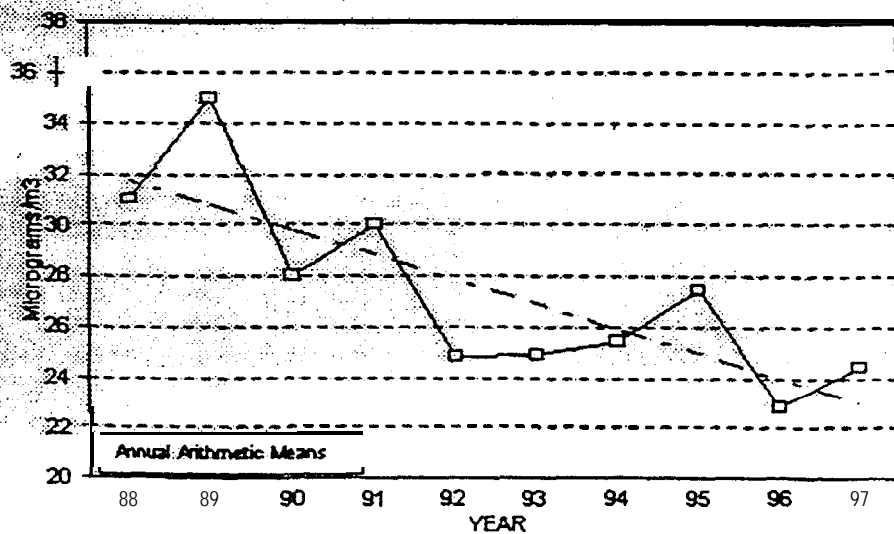
Site 40 Total Suspended Particulates Trend

TSP SITE-40, Dayton
10-Yr. Trend for 1997
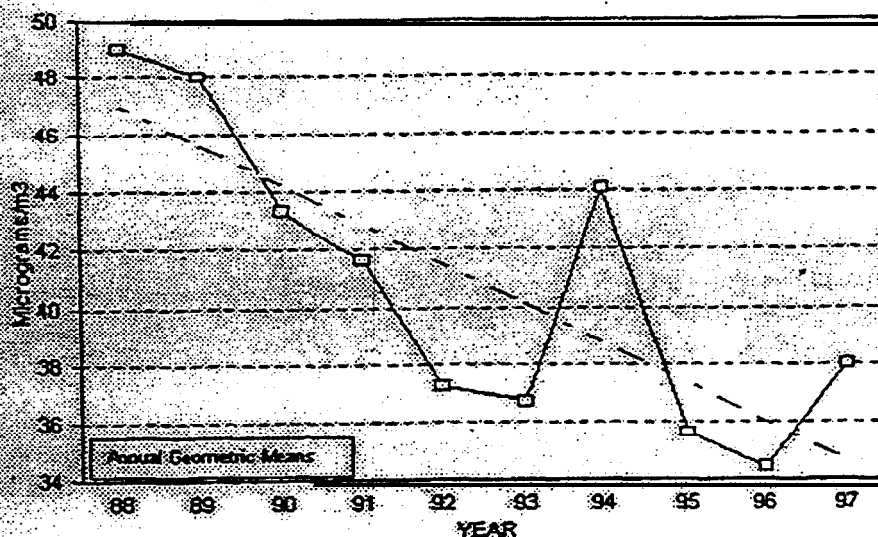
Site 15 PM 10 Trend

PM-10 SITE-15, Centerville
9-Yr. Trend for 1997
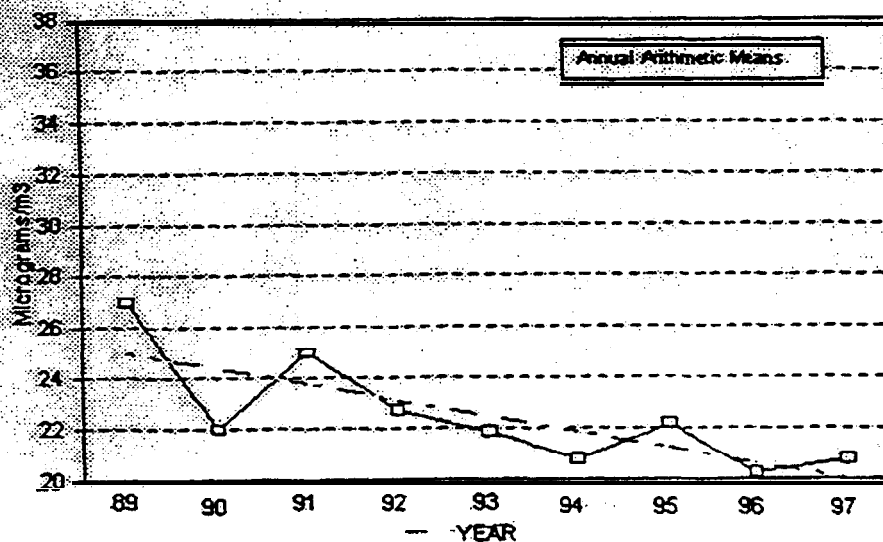
WATER SUPPLY & TREATMENT

Division of Water Supply & Treatment

CITY OF DAYTON
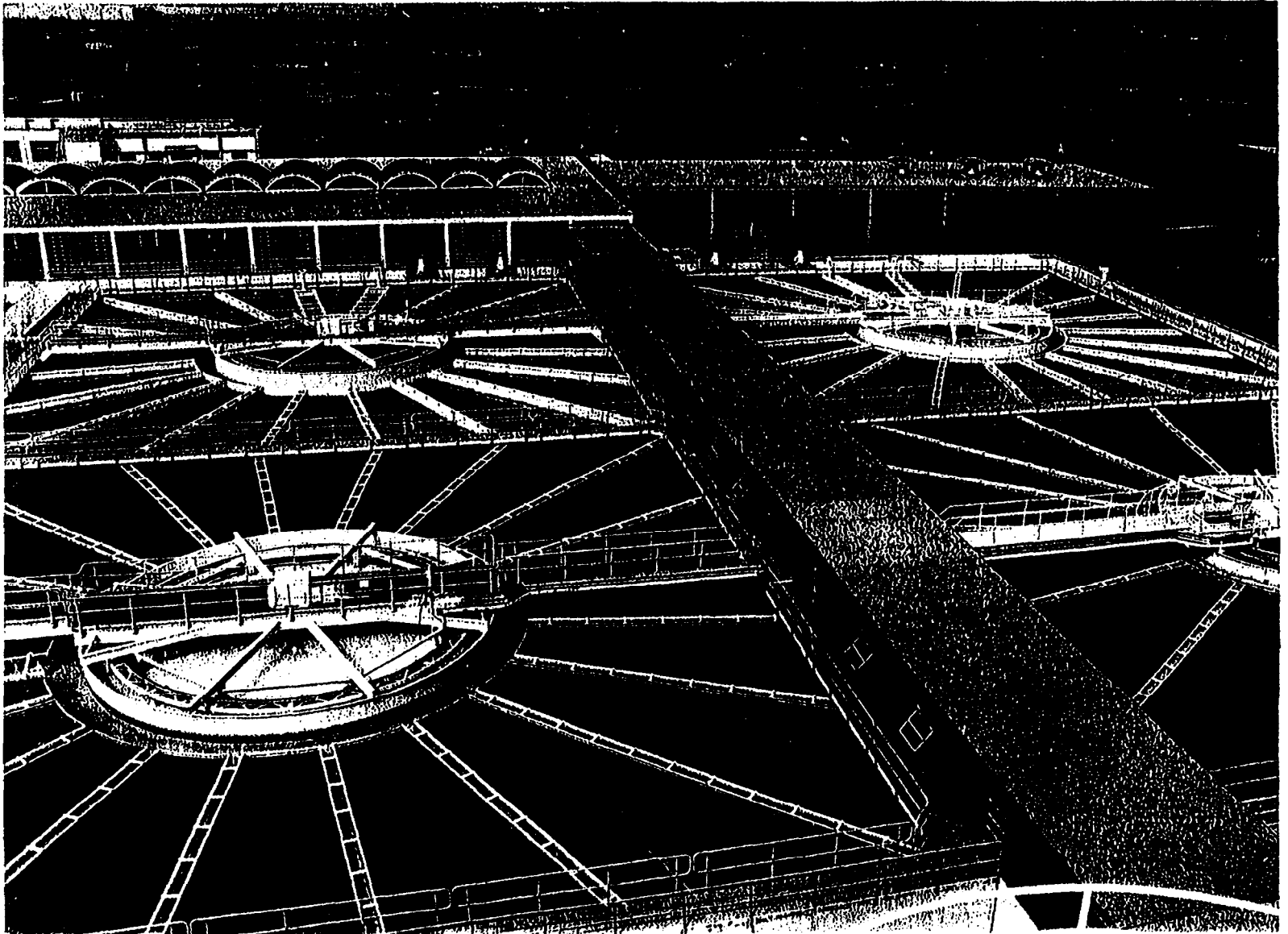
Miami Softening Basins

Division of Water Supply & Treatment

Twenty four hours a day, every day of the year, the Division of Water Supply and Treatment works to provide high quality drinking water at a modest cost. The Division of Water Supply and Treatment treats and pumps drinking water to approximately 420,000 people in Montgomery County.

The Water Supply and Treatment Division is responsible for the well fields, treatment plants, Lime Recovery Facility, pumping stations and water storage facilities of the Dayton water system. In 1992, 31.5 billion gallons of treated water was pumped to area citizens.

The City of Dayton has two drinking water well fields, and two water treatment plants. A Lime Recovery Facility reclaims lime for water softening at both treatment plants. The water level in the aquifer (ground water) at both well fields is maintained by recharge lagoon systems which are filled by water from the Mad and Miami Rivers.
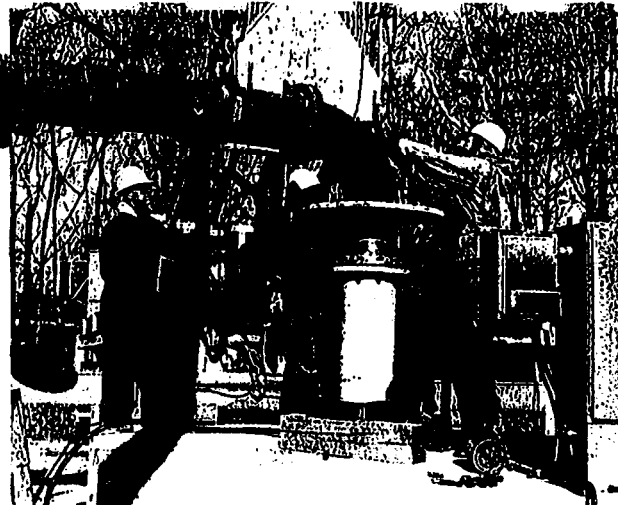
Well field maintenance crews Install new pumping equipment In wells to maintain well field productivity.

This brochure is the story of the engineers, operators, chemists, electricians, laborers and others who work quietly around the clock to insure that the water system has a positive impact on the citizens and businesses of Dayton and it's surrounding communities.

Chemists test ground water and treated water to ensure compliance with federal, state and Clty of Dayton quality standards.

■

Past, Present, and Future

Before 1870, Dayton residents obtained water from individual home wells or centrally located public wells. The first municipal well was placed in service in March, 1870. By 1901, ninety four 8" wells had been drilled along the Mad River, In 1953, Dayton's first lime softening, water treatment plant went into service on Ottawa Street along the Mad River. In 1965, the new Miami Water Treatment plant began treating water from the Miami Well Field.

In the 1980's, many construction projects were completed to increase water treatment capacity and to protect , high quality ground water, (see chart below).

GROUND WATER recharge system improvements have been made in recent years at both well fields. A new water quality laboratory was , completed in 1990 next to the Miami Treatment Plant. Renovation and upgrading of both the Ottawa Treatment Plant and Pumping Station was completed in 1992. Water main improvements and well field expansion projects will continue through the 1990's.

■
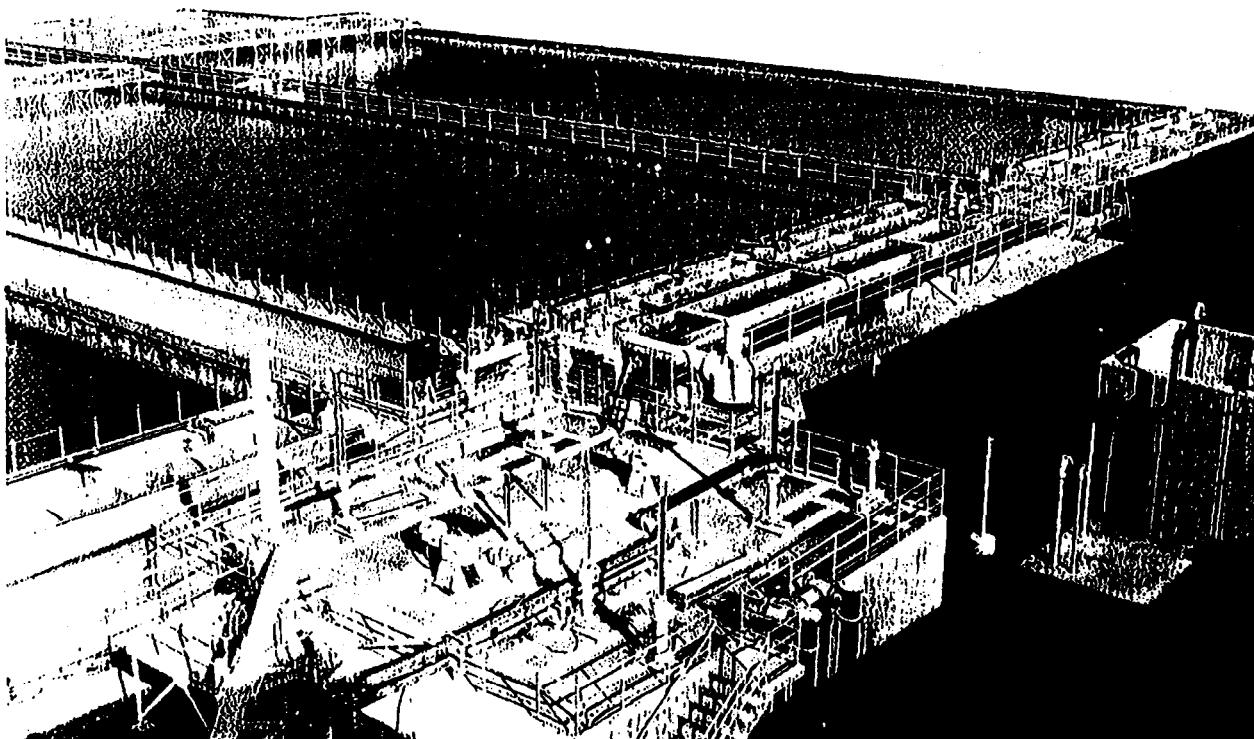
Water Treatment Construction Projects Completed In 1980's

- ■ New Drinking Water Wells
- ■ Monitoring Wells to detect contamination threats
- ■ Miami Treatment Plant Expansion and Renovation
- ■ Lime Recovery Facility Improvements
- ■ Miami Air Stripping Facility
- ● Powdered Activated Carbon Facility
- ■ Tates Hill Air Stripping Facility
- ■ Portable Air Stripping Towers
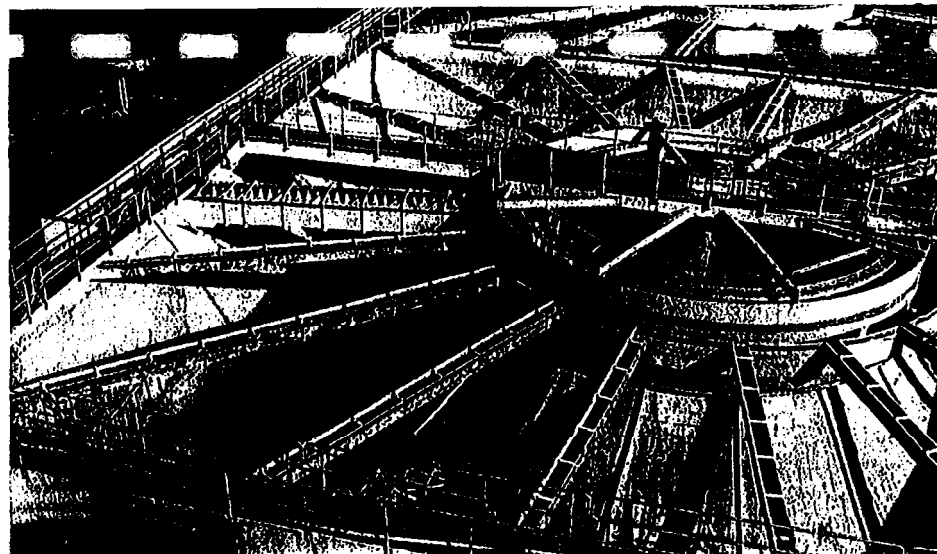
Ottawa Treatment Plant.

Water Treatment Diagram

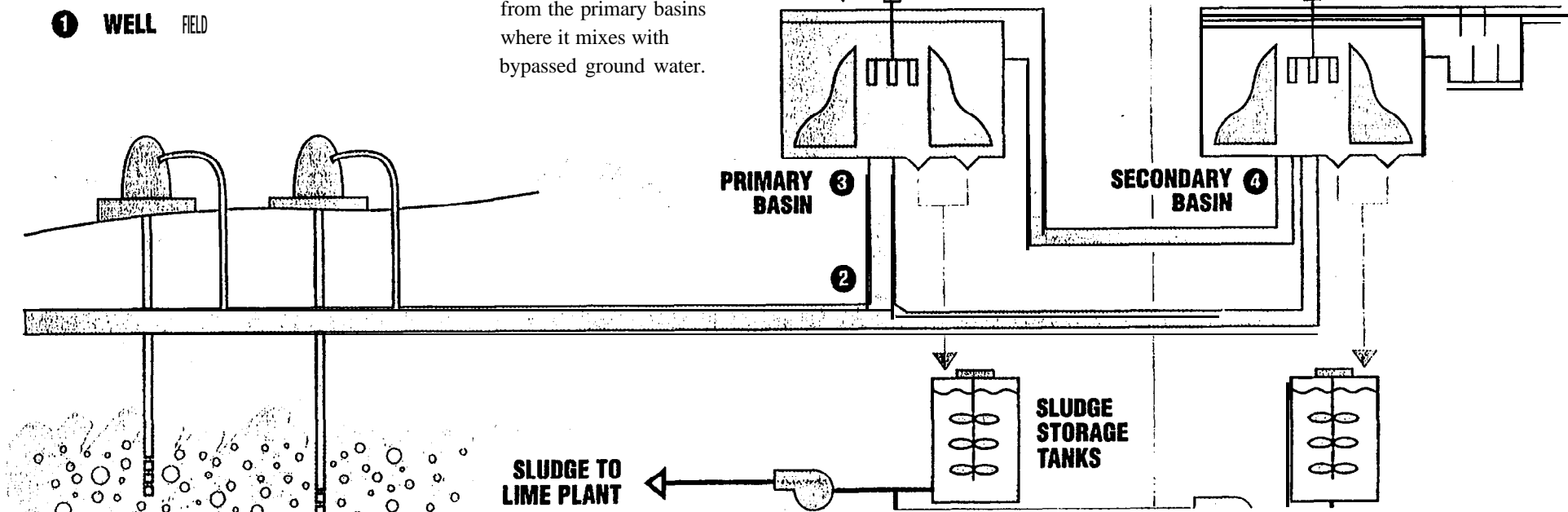Wells pump extremely hard ground water to the treatment plant for softening.

In **the** split treatment process, approximately 90% of the ground water enters the two primary softening basins and 10% bypasses to the two secondary basins.

Water enters at the bottom of **the** primary basins **and** is mixed with lime slurry as water travels upward. Lime reacts with hardness causing compounds in the water. This reaction forms calcium carbonate and magnesium hydroxide which settles to the bottom of the basins and accumulate as sludge.

Softened water flows from the primary basins where it mixes with bypassed ground water.

Basins are emptied for maintenance and **inspections** every year.

CHEMICAL FEED EQUIPMENT

LIME

CL_2

CO_2

F

❺

❶ **WELL** FIELD

PRIMARY ❸ BASIN

SECONDARY ❹ BASIN

❷

SLUDGE TO LIME PLANT

SLUDGE STORAGE TANKS

Treatment Plant operators clean sand filters by backwashing with treated water.

The pH of the softened water is stabilized by the addition of carbon dioxide (CO_2). Chlorine (Cl_2) and fluoride (F) are added to the water for disinfection and to promote dental hygiene.

Sand filters remove suspended particles from the water.

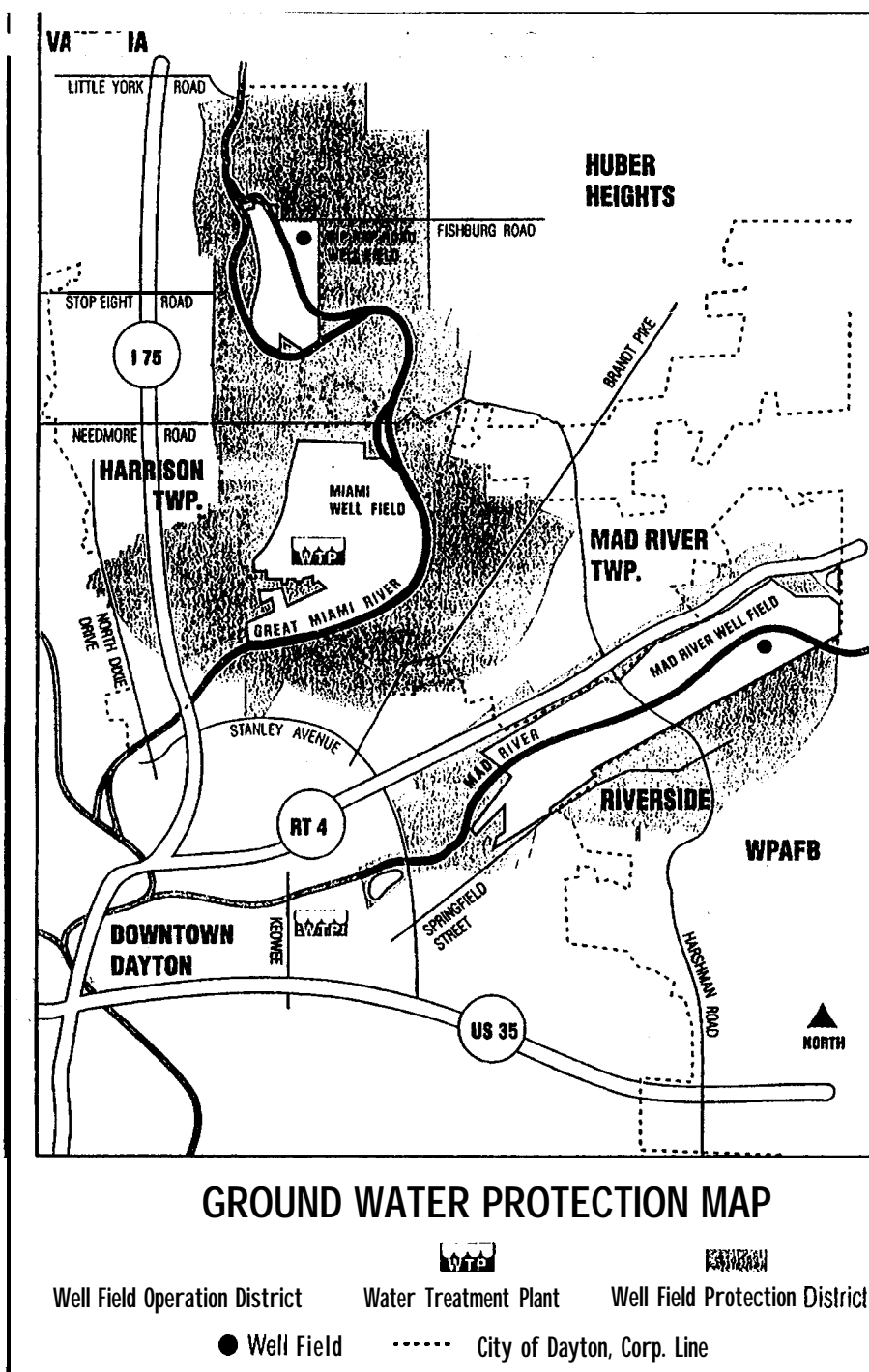Treated water is pumped into the distribution system.

DISTRIBUTION SYSTEM

❻ RAPID SAND FILTERS

RESERVOIRS

❼ PUMP ROOM

PUMP STATION
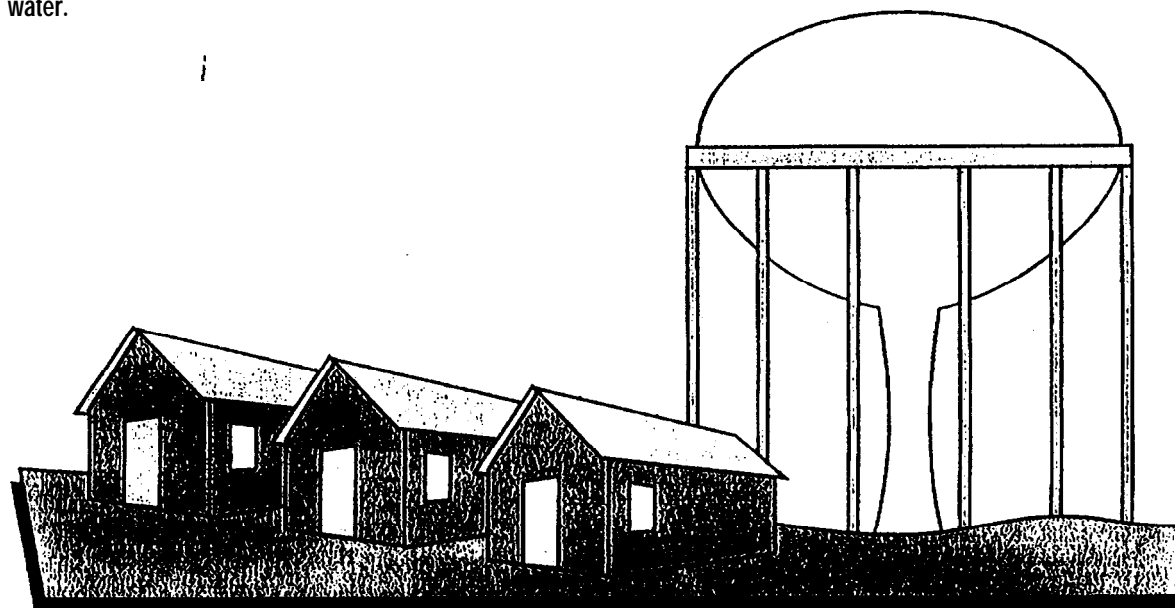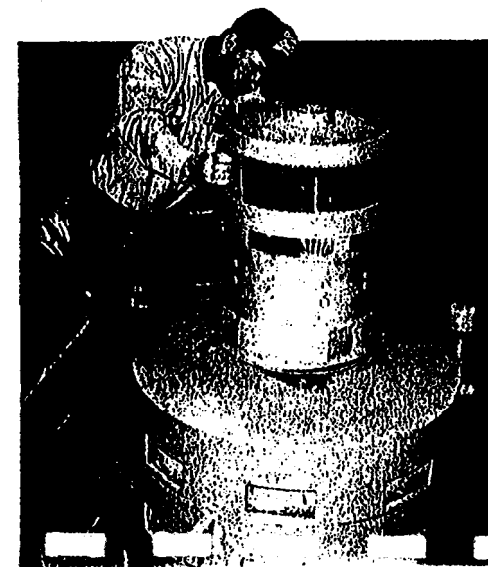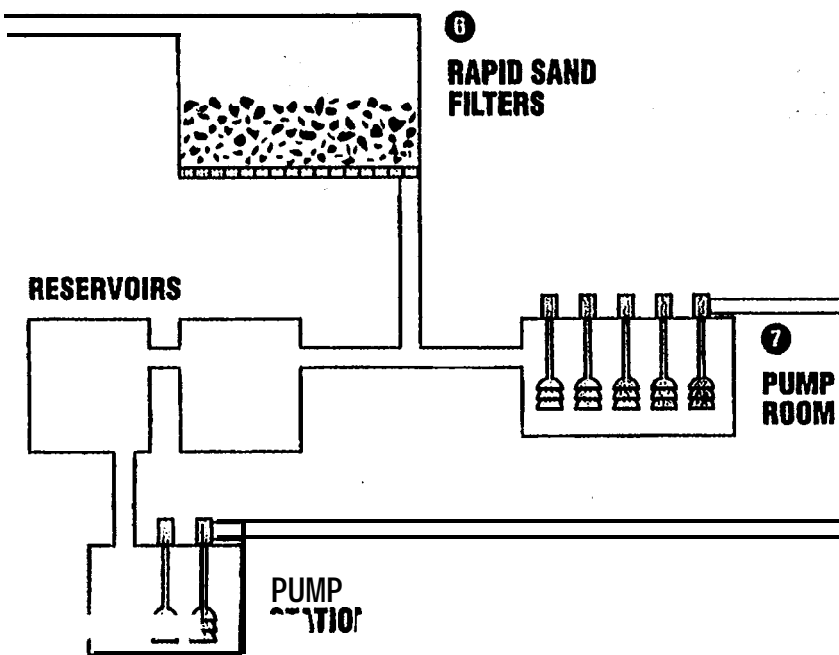
Electricians perform maintenance on water distribution pumps.

Ground Water Protection

Wells at the Mad River Well Field and Miami Well Field pump groundwater from the Great Miami Buried Valley Aquifer. This aquifer provides water to approximately 1.5 million people in southwestern Ohio. To clearly assess contamination threats to the groundwater, environmental protection studies were completed for both well fields in 1986 and 1987. A Well Field Protection Program was developed to protect the groundwater. This program includes land use control zoning, groundwater remediation and emergency prepared-ness. Networks of approximately 130 monitoring wells surround both well fields. Monitoring wells and drinking water wells are routinely sampled and tested for water quality. Fourteen packed tower, air stripping systems were constructed to treat contaminated groundwater. A powdered activated carbon facility can provide emergency treatment in case of a chemical spill. Fortunately, this facility has never been used. Portable air stripping towers can be moved to specific sites on or near both well fields.

■

GROUND WATER PROTECTION MAP

Well Field Operation District   Water Treatment Plant   Well Field Protection District

● Well Field   ······ City of Dayton, Corp. Line

CITY OF DAYTON

Water System Facilities

Facilities	Rated Capacity (Million Gallons / Day)
WELL FIELDS	
Miami Well Field - 42 Wells	105
Mad Well Field - 59 Wells	137
Total Rated Well Field Capacity	242
(Total Estimated Safe Yield)	145*
TREATMENT PLANTS	
Miami Treatment Plant	9 6
Ottawa Treatment Plant	96
Total Treatment Capacity	1 9 2
LIME RECOVERY FACILITY	150 Tons/Day
MAIN PUMPING STATIONS	
Ottawa Pumping Station	124
Miami Pumping Station	93
BOOSTER PUMPING STATIONS (10)	5 2

Storage Tanks and Reservoirs	Rated Capacity (Million Gallons)
Miami Plant Reservoirs	20
Ottawa Plant Reservoirs	10
Anderson Reservoir	10
Burkhardt Reservoir	10
Calvary Reservoir	10
Germantown Reservoir	16
Brandtford Reservoir	2
Nordale Tank	2
Strand Tank	2
Mt. Auburn Tank	2
Wilmington	2
Burkhardt Standpipe	1
Kitridge Tank	0.5
Dayton Airport Tank	0.5
TOTAL STORAGE CAPACITY	88.0

Dayton supplies drinking water to most of Montgomery County.

Montgomery County owns two reservoirs and six tanks.

*Estimated Safe Yield is the maximum pumping rate which would maintain the water table at an acceptable level.

Quality Control

Division of Water Supply and Treatment employees routinely sample and test treated drinking water samples to insure that the water complies with all drinking water standards. In 1992, over 400,000 tests were performed on City of Dayton treated water, production well and monitoring well samples.

Division of Water Supply & Treatment

Superintendent
237-0020

Water Laboratory
237-0200

Information or Tours
237-0046

Normal Division office *hours are:*
Monday – Friday
7:00 a.m. to 3:30 p.m.

Division of Water Distribution

Superintendent
443-4904

Water Meters
443-4902

Water Emergencies
443-4905

Division of Water Revenue

FINANCE DEPARTMENT

Water Bill Questions
443-3550

CITY OF NEIGHBORS

How We Did It
A Solution Seminar

May 26th, 1999
City of **Dayton, Ohio**
Miami Water Treatment Facility

Where We Started

- Original SCAM **mini-computer** system
- Early **80's technology**
- Designed **by** large **engineering** firm
- installed by **specialty controls company**
- **Very little input from** City of **Dayton** "hands on" **personnel**

What We Got Back Then

- 6 Hardware **that was "state** of **the art"** at time of design - bat obsolete **by** the time it was **installed**
- 4 Proprietary **software** customized for the **project**
- **Complex, multi-level control schemes that** PC **one ever understood**

The Result:
A Bad Case of "Soft Rot"

- Problems were **difficult** to diagnose: impossible to fix
- **Upgrades** were few and far between
- Heavily deaendeaon System **Supplier** for **support**

Users Grew Frustrated
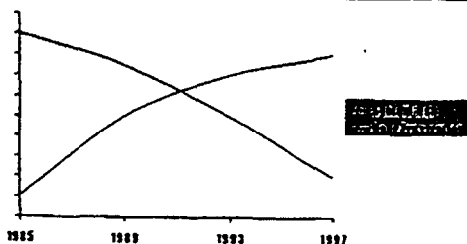
Time for a New System

- Old system **on** Its **death** bed
- Old system **supplier** going **out** of business
- We looked **around** and saw **many** exciting new possibilities **and** asked __

Can We Do It Ourselves?

- Operators and Maintenance Team very familiar with plant and its operation
- Electricians very familiar with field instrumentation and I/O
- Computers no long☐_ vsterloas: are now a part of everyday life
- Management contidcat In personnel and willing to try a new approach

The Answer: Maybe.,

- We want to be a full participant in every step of the process
- We can assess the current system and do preliminary system design on our own
- As we learn mote. we can decide how much outside help and expertise is needed

Assembling the Team

- Core Group:
  - Electrical Supervisor
  - Elcctriclans with Miami WTP Expertise
  - Water Supply & Treatment Division Manager
  - "Den Mother"

Assembling the Team

- Flexible Members
  - Maintenance Personnel
  - Construction & Electronic Electricians
  - Plant Supervisor
  - Operators
  - Other Water Department Management
  - Outside Vendors

The First Step:
Assess the Existing System.

- Review:
  - I/O
  - Instrumentation
  - Control Strategies
  - Graphics
  - Reports
- Review and update drawings

Questions to Ask

- What do ueoule like about the old system?
- What do ueoule hate about tbe old system?
- What Is unnecessary or redundant?
- What do we want to keep?
- Is it feasible to keep it?

Determine Needs & "Wish List"

- Operators
- Management
- Laboratory / Regulatory Agencies
- Maintenance
- Electricians

Envision The System

- Develop a "vision" of the Ideal system
- Impose a 'reality check" on that system
  - $$$ Constraints
  - .₋ₖₒᵣ Constraints
  - Technology Constraints

Develop Criteria for System Selection

- Functionality
- Easy for operators and others to use
- Easy to configure. install and start up
- Expandable
- local support for all hardware
- Open system

What Do We Consider an 'Open System?"

- Off-the-shelf parts
- Ho customized software from the vender
- Scalable-
- Easy to upgrade hardware/software
- Can mix a match hardware & software to suit our needs

Evaluation Process

- SCADA/MMI software
- PLC and PC-based control
- I/O hardware
- 4 Communication networks

A Bold Decision

- We can design and implement this ourselves
  - We have the Team
  - we have the Knowledge
  - we have the Technology and the Tools

Another Bold Decision

- PC-Based Control over PLC's
  - Why was this bold?
    - PLC's are tried and true
    - PC-Based Control was new and limited chiefly to automotive and other discrete control applications
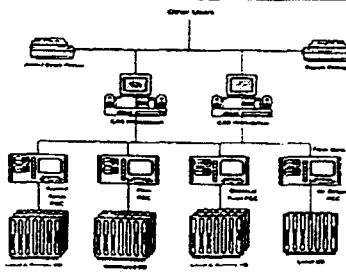
Another Bold Decision

- PC-Based Control over PLC's
  - Why was it right for our application?
    - Easy to write, debug and maintain control strategies
    - Open system considerations
    - cost savings

System Design

The Procurement Process

- Software and hardware written as two separate RFP's
- 4; Cable and other items purchased TQA
- Many checks built into RFP's to ensure that we worked with established vendors
- Both RFPs Included adequate amount of technical support, II needed

"System" Implementation

- Brought PC controllers on-line one at a time
- Involved operators In graphic display design and other aspects
- Implemented design revisions "on the fly"
- Discovered and fixed equipment and Instrumentation problems in the process

The Result

- Electricians literally know the system "inside and out"
- Operators call this "our computer and not the "Turbitrol computer" or-even worse - the "#%!@ computer"
- Control strategies, graphic displays, etc. match the needs of the plant and Its staff

Reasons for Our Success

- A true team effort
- Team members who like to learn and lore a challenge
- Management that is willing to try new technology and new approaches
- Tolerant and cooperative plant personnel
- Vendors who are both trustworthy and technically knowledgeable

A Few Lessons We Learned (The Hard Way)

- The Communications Network is just at important as Me components it is iinkine
- Training should be conducted "just in time"

We're Not Done Yet

- We continue to add automatic control
- We are adding additional user stations
- We installing latest versions of software
- We have begun design process for Ottawa WTP and Well Fieids

Our Advice to You

- Even if you don't choose a "Do It Yourself" system, you should:
  - Invest plenty of time in the design phase
  - Involve a diverse team interested parties
  - Participate as much as possible in every step Of the process

APPENDIX G
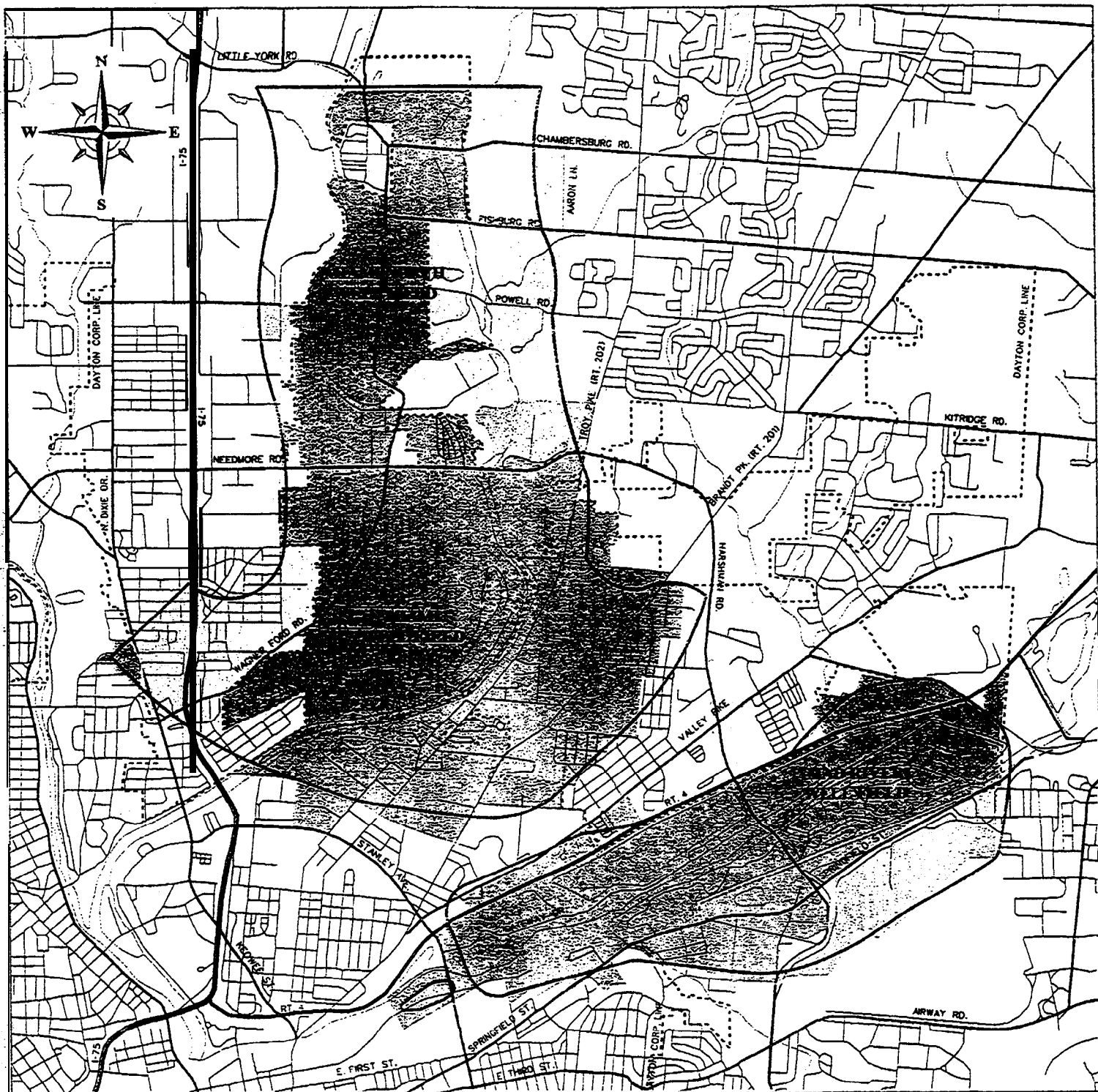
DESIGNATED WELL FIELD PROTECTION AREA

DAYTON		VANDALIA	
WRIGHT PATTERSON AFB		HARRISON TWP.	
HUBER HEIGHTS		RIVERSIDE	

CAPTURE AREA BOUNDARY

RAPCA's 6 Counties & 1997 Monitoring Sites
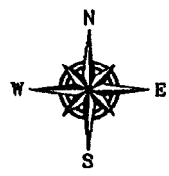

1997 Monitoring Sites
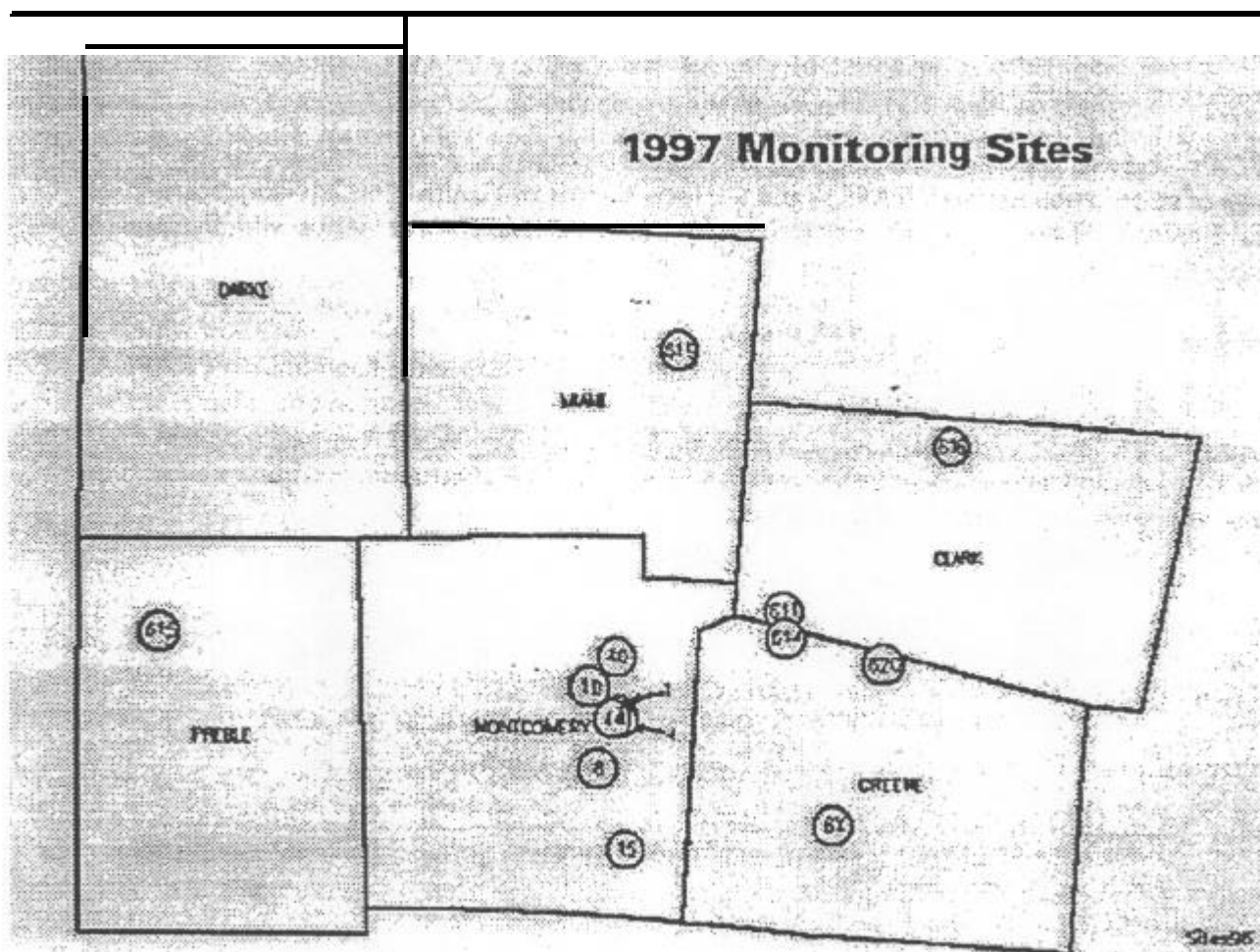
Key to Sites

- Site 1 - NAMS & PSI site for PMIO, Dayton. Montgomery County
- Site 4 - NAMS & PSI site for CO, Dayton, Montgomery County
- Site 6X - SLAMS site for Ozone, Xenia, Greene County
- Site 8 - SLAMS site for PMIO, Moraine, Montgomery County
- Site 10 - NAMS site for CO, Dayton, Montgomery County
- Site 15 - SLAMS site for PM10, Centerville, Montgomery County
- Site 40 - NAMS site for TSP and Lead, and SLAMS & PSI site for Ozone, Dayton, Montgomery County
- Site 44 - NAMS & PSI site for Sulfur Dioxide, Dayton, Montgomery County
- Site 611 - SLAMS site for Sulfur Dioxide, and NAMS site for Ozone, Enon, Clark County
- Site 614 - DISCONTINUED Monitor for PM10, Fairborn, Greene County
- Site 620 - SPM Monitor for PMIO. Yellow Springs. Greene County
- Site 615 - SLAMS site for Ozone, New Paris, Preble County
- Site 616 - NAMS site for Ozone, Springfield, Clark County
- Site 619 - SLAMS site for Ozone, Casstown, Miami County